BALTIC
STAKEHOLDER
CONFERENCE 2024
REPORT

# Contents

## List of acronyms

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|---|---|
| **AI** | Artificial intelligence |
| **BaltFish** | Baltic Sea Fisheries Forum |
| **BfN** | Bundesamt für Naturschutz |
| **BSAP** | Baltic Sea Action Plan |
| **BSC2024** | The Baltic Stakeholder Conference 2024 |
| **CFP** | Common Fisheries Policy |
| **CICES** | Common classification of ecosystem services |
| **ES** | Ecosystem service |
| **GIS** | Geographic Information System |
| **HAB** | Harmful algal bloom |
| **HELCOM** | Baltic Marine Environment Protection Commission |
| **IBA** | Important bird area |
| **IGO** | Intergovernmental organization |
| **IMMA** | Important marine mammal area |
| **ISRA** | Important shark and ray area |
| **IUCN** | International Union for the Conservation of Nature |
| **KBA** | Key biodiversity area |
| **MA** | Millenium Assessment |
| **ME** | Management effectiveness |
| **MEA** | Management effectiveness assessment |
| **MPA** | Marine protected area |
| **MSFD** | Marine Strategic Framework Directive |
| **MSP** | Maritime spatial planning |
| **NGO** | Non-governmental organization |
| **OBIS** | Ocean Biodiversity Information System |
| **OECM** | Other effective area-based conservation measure |
| **QA** | Quality assessment |
| **SLU** | Swedish University of Agricultural Sciences |
| **SPA** | Special protected area |
| **SPIA** | Spatial protection and impact assessment |
| **SYKE** | Finnish Environment Institute |
| **TEK** | Traditional ecological knowledge |
| **UI** | User interface |
| **UNEP** | United Nations Environment Programme |
| **WP** | Work package |

## Background

The Baltic Stakeholder Conference 2024 (BSC2024) was held in a hybrid format on 29 February 2024, with the in-person event taking place at Hanaholmen – the Swedish-Finnish Cultural Centre in Espoo, Finland.

BSC2024 was the inaugural stakeholder event for the Mission Ocean PROTECT BALTIC project, which is funded by the EU under Horizon Europe with HELCOM as the lead partner.

More than 330 participants registered for the conference from the Baltic region and beyond. 233 participants attended the event, with 69 in-person and 164 online (see Annex I for details).

The conference plenary sessions were moderated by Rogier Elshout, a professional moderator from the company moderating.eu (https://moderating.eu). Rogier was also the facilitator for the Youth Event that was held alongside the main conference during the day.

BSC2024 included workshop sessions organized around 10 themes, with all participants signing up to attend two sessions each:

| Management | Updating management guidelines for marine protected areas (MPAs), developing a methodology for management effectiveness assessment, and testing it in national case studies. |
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| Spatial modelling | Creating high-resolution environmental datasets for the Baltic Sea and projecting future species and habitat distributions to inform protection and management strategies. |
| Ecosystem services | Developing a versatile methodology to assess, map and value ecosystem services. The project will inform marine protection, optimize marine spatial protection for MPAs and other effective area-based conservation measures (OECMs), and identify key areas for ecosystem service production, demonstrating their socio-economic value and guiding future assessments. |
| Legal frameworks for planning marine spaces | Assessing and aligning international and EU legal frameworks with HELCOM's Baltic Sea Action Plan (BSAP) targets, evaluating compatibility with directives such as the Birds and Habitats Directive, Marine Strategy Framework Directive (MSFD), and Common Fisheries Policy (CFP). |
| MPA Portal | Building and updating a regional portal with information on MPAs and OECMs. Employing agile development methods, the process ensures alignment with the needs of MPA managers and users, integrating key |

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| | functionalities and data models to enhance regional capacity in marine protection. |
| **Restoration** | Contributing to the development of a Regional Restoration Action Plan and toolbox, highlighting regional priorities, methods, costs, and feasibility regarding restoration efforts. |
| **Governance** | Fostering a shared regional understanding of marine spatial protection, establishing common terminology, and setting ecologically relevant protection targets and indicators. Also, identifying threats and pressures on ecosystems and assessing the efficiency of existing protection measures. |
| **Monitoring** | Reviewing the existing monitoring systems for marine spatial protection in the Baltic Sea, exploring innovative monitoring tools and methods, and developing a comprehensive framework and guidelines for the entire MPA network. |
| **Coherence** | Revising criteria for assessing the coherence of marine spatial protection, aligning them with scientific knowledge and environmental goals, and developing connectivity models to understand species and habitat interactions. The work assesses the MPA network, emphasizing representativity, replication, adequacy, and connectivity, with a focus on species and habitat distribution. |
| **MPA Europe Baltic Sea Regional Stakeholder workshop** | MPA Europe presents their results to date on classifying marine ecosystems, modelling species and habitat distributions and mapping blue carbon stores. They will also invite stakeholders to begin to co-identify use cases for their maps, final atlas, and results. |

The agenda for the conference is included in Annex II but is also available online at: https://helcom.fi/bsc2024. Recordings from the plenary sessions and presentations given during the conference are also available on the PROTECT BALTIC website, along with this report: https://protectbaltic.eu/bsc2024.

The overarching goal of BSC2024 was to create a collaborative space for stakeholders vested in the PROTECT BALTIC project and its objectives. By convening a diverse group of stakeholders, ranging from governmental bodies and environmental organizations to local communities and industry representatives, the conference aimed to cultivate idea generation and knowledge exchange.

At its core, BSC2024 aimed to actively involve stakeholders and explore their viewpoints and aspirations regarding their involvement in the PROTECT BALTIC project throughout its lifecycle. Through interactive sessions, workshops, and plenaries, participants were

encouraged to express their visions, expectations and concerns, thereby shaping and influencing the trajectory of the project and its outputs.

By bringing together stakeholders with varying levels of expertise and diverse perspectives, the conference aimed to facilitate cross-sectoral dialogue and collaboration, paving the way for innovative solutions and collective action towards Baltic Sea protection.

PROTECT BALTIC's main goal is to improve the biodiversity status of the Baltic Sea, raising the coverage of protected areas to 30% with one-third of these under strict protection. The project aims to do this by providing national authorities with data-driven and up-to-date information on what needs protection, where, and from what threats. National authorities will then be in a better position to decide what to prioritize. By covering ecosystem services and functions within the project's scope, and providing manuals and guidance on the designation and effective management of MPAs, countries are given a platform in the project through which they can advance regional governance. In this way, the project is working to improve the societal aspects of planning and implementing protection.

Ultimately, BSC2024 aimed to transcend mere information dissemination, striving instead to cultivate a sense of ownership and empowerment among stakeholders interested in engaging with the project. By not only raising awareness but also fostering active participation, the initiative sought to galvanize stakeholders towards meaningful involvement and collaboration.

Presentations given during BSC2024 are available on the PROTECT BALTIC website at: https://protectbaltic.eu/bsc2024-presentations, along with recordings from the plenary and workshop sessions: https://protectbaltic.eu/bsc2024-recordings.

The recording of the Youth Event has not been published, to respect the privacy rights of the individuals within that workshop.

## Background on HELCOM

*HELCOM is an intergovernmental organization (IGO) and a regional sea convention in the Baltic Sea area. A regional platform for environmental policy making, HELCOM was established in 1974 to protect the marine environment of the Baltic Sea from all sources of pollution. HELCOM has 10 Contracting Parties, namely Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden.*

*Stakeholder conferences are organized regularly under the HELCOM umbrella, gathering its partners from across the board to advance on the pressing issues affecting the Baltic Sea's marine environment. Further information on HELCOM is available on the HELCOM website (https://helcom.fi).*

## Morning plenary

### Introduction to the project



*Image 1: Jannica Haldin presents an outline of the PROTECT BALTIC project during the opening plenary session*

*Jannica Haldin*, the Deputy Executive Secretary of HELCOM and the Project Manager for PROTECT BALTIC, set the conference's tone by highlighting the critical focus on protection within the Baltic Sea region and introducing PROTECT BALTIC as a key initiative aiming to address this concern. The presentation from the opening plenary is available here: https://protectbaltic.eu/bsc2024-opening-plenary

The presentation provided attendees with a comprehensive understanding of the unique nature of the Baltic Sea, the relationship between society and the sea, the complex drivers that are placing pressure on the sea's ecosystems, why protection is needed and how PROTECT BALTIC will work to combat the triple planetary crisis and attain the 30 % protection and 10% strict protection targets by 2030.

The key message here though is that it's not just about getting to the 30%, but about getting there in a way that secures positive biodiversity outcomes, maintains ecosystem functions, and enables short- and long-term production of ecosystem services and sustainable use.

Recognizing the importance of establishing a shared baseline understanding at the start of

the conference, Jannica's presentation ensured that attendees were equipped with the necessary context to engage in the conference's workshops constructively.

## The unique nature of the Baltic Sea

Attendees gained invaluable insights into the unique characteristics of the Baltic Sea. The presentation delved into the sea's geological history, highlighting its relative youthfulness compared to larger oceans and its shallow depth. Moreover, the Baltic Sea's significant variability in temperature and salinity were emphasized, which poses challenges to the 5,000 species inhabiting its waters. This nuanced understanding of the Baltic Sea's ecology laid the groundwork for discussions on protection strategies.
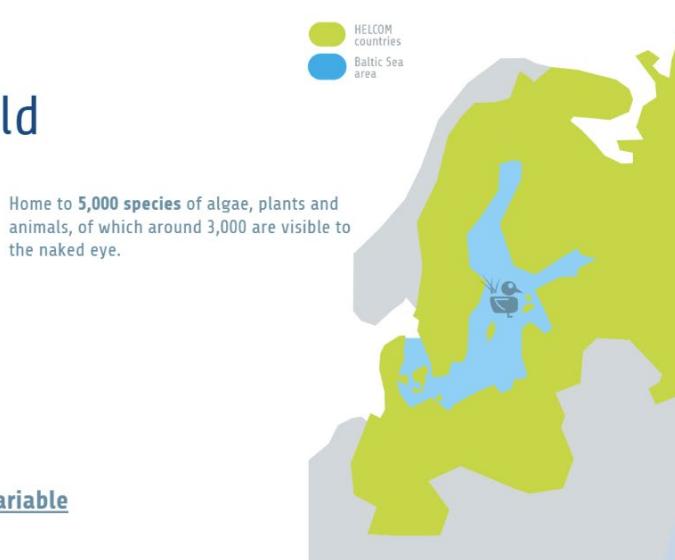


*Figure 1: The presentation highlighted the unique nature of the Baltic Sea and that the sea is home to 5,000 species.*

## Importance of protection

The pressing need to mitigate human activities' detrimental impacts on the Baltic Sea's biodiversity and ecosystem resilience emerged as a central theme. Participants were made aware of the imperative need to implement effective measures to safeguard the sea's fragile ecosystem and ensure its long-term sustainability. Jannica underscored the urgency of collective action in addressing these challenges, emphasizing the role of projects like PROTECT BALTIC in driving positive change.

## Relationship between society and the Sea

The complex relationship between society and the sea was explained, emphasizing society's reliance on the Baltic Sea for a myriad of ecosystem services. Attendees gained insights into the economic and non-market values derived from the sea, including provisioning services, cultural significance and regulatory functions. This discussion underscored the need for sustainable management practices to preserve these benefits for current and future generations.

Jannica highlighted the interconnectedness of species within the Baltic Sea ecosystem, emphasizing that these species function together and create essential links between one another. This interconnectedness forms a safety net or resilience within the ecosystem, where the more connections exist, the more resistant the system is to negative impacts.

She also underscored that the traditional perspective of humans separate from the rest of the ecosystem is flawed. Instead, from the sea's perspective, humans are just one of many species (see Figure 2). As such, effective management and protection efforts must recognize humanity's role as part of the broader ecosystem, rather than viewing it as separate. Failure to understand this interconnectedness could lead to ineffective protection measures.
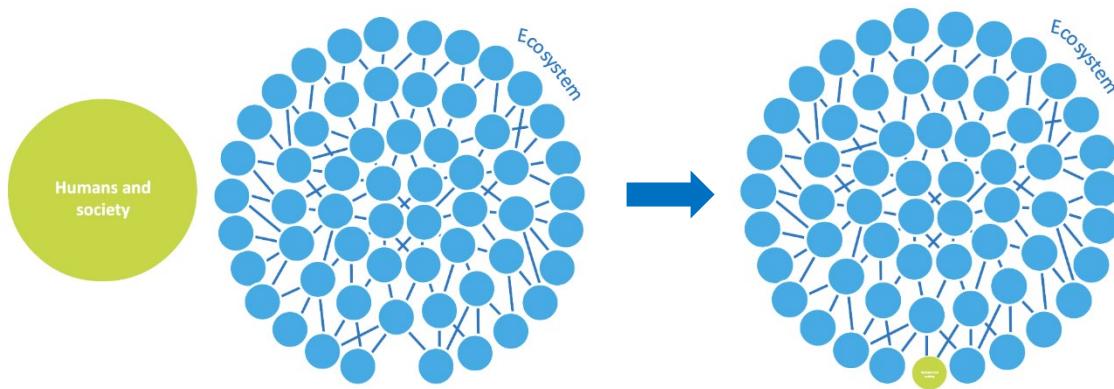


*Figure 2: The traditional perspective of humans being separate from the rest of the ecosystem is flawed. Instead, from the sea's perspective, humans are just one of many species. For a truer representation of the 5,000 species within the Baltic Sea, you would need to increase the number of circles in this figure by a factor of approximately 100.*

## The complex relationship between activities and pressures

Humanity's relationship with the Baltic Sea, is influenced by a complex array of drivers. These drivers encompass various factors that dictate human actions, including what activities are undertaken, where they occur, who participates and their intensity.

These drivers, in turn, manifest as activities within the marine environment, which subsequently exert pressures on the ecosystem. This cascade of pressures ultimately impacts the state of the Baltic Sea. As recently outlined in HELCOM's State of the Baltic Sea report (https://stateofthebalticsea.helcom.fi), the current state of the ecosystem is less than optimal.

Despite the seeming simplicity of the cause-and-effect relationship between activities and pressures, the reality is far more intricate. Human activities generate multiple pressures simultaneously, and these pressures often intersect and overlap within specific areas. Consequently, addressing environmental challenges requires a comprehensive understanding of how various activities and pressures interrelate (see Figure 3).

This nuanced comprehension underscores the importance of protection efforts and why PROTECT BALTIC is needed. By managing and mitigating the impacts of human activities,

protection measures aim to safeguard the Baltic Sea's ecological integrity and promote its long-term health and resilience.
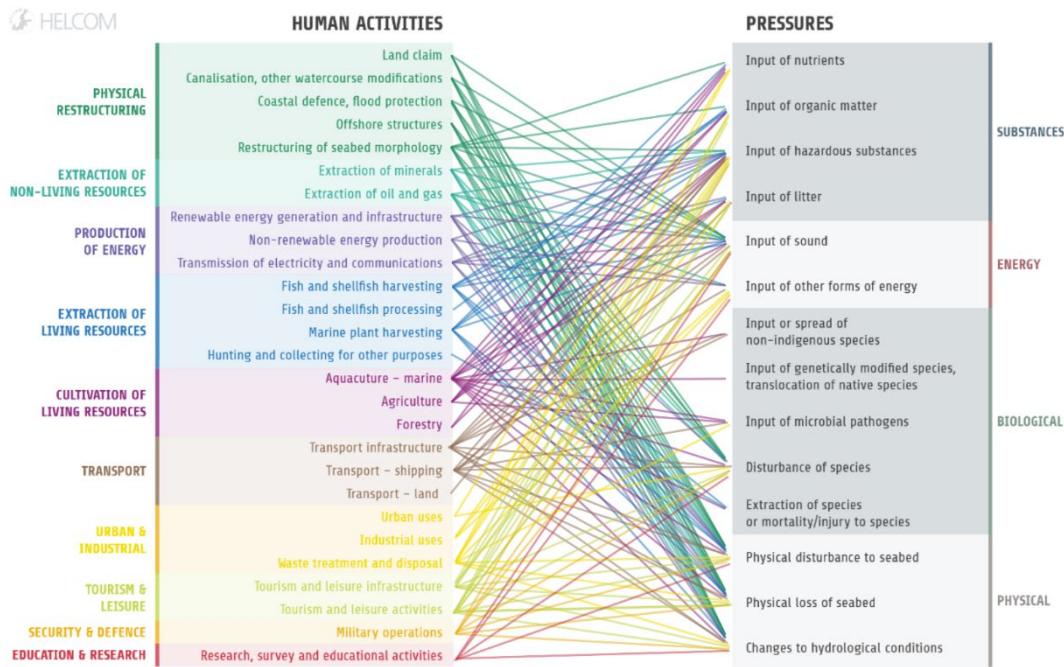


Figure 3: Human activities lead to many different pressures at the same time and there are many pressures acting in any given area at any given moment. To make a positive change for the environment, understanding how these activities and these pressures fit together is crucial.

## PROTECT BALTIC's objectives

PROTECT BALTIC's objectives and strategies were then outlined in detail, with Jannica emphasizing the project's multifaceted approach to governance vitality, sound design and planning of protected areas, and effective management practices.

Currently, approximately 16.5% of the Baltic Sea is under protection. However, challenges persist, including incomplete knowledge bases, governance gaps, and inadequate adaptive management. Doubling the protected area to 30% in seven years poses a significant challenge, which necessitates collective action.
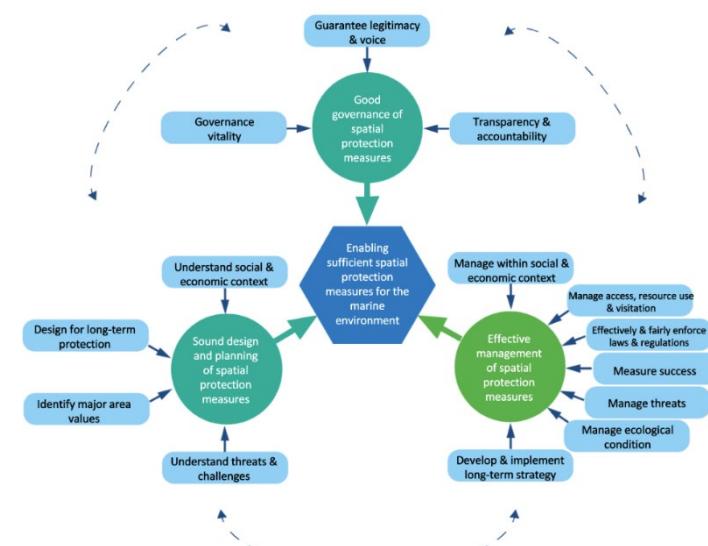


Figure 4: The objectives are multifaceted and three-pronged. To enable sufficient protection, good governance, sound design and planning, and effective management are needed.

But it's also not just about getting to the 30%, but getting there in a way that provides genuine benefits for biodiversity. PROTECT BALTIC will focus on enabling sufficient spatial protection measures to limit negative impacts and provide these biodiversity benefits.

Governance, sound design and planning of protected areas, and effective management are identified as the three crucial pillars for achieving effective MPAs. And the interconnection between these components underscores the need for synergies and cooperation so the project can be effectively implemented (see Figure 4).

## PROTECT BALTIC's protection optimization framework

Jannica then elaborated upon the protection optimization framework for PROTECT BALTIC (see Figure 5), highlighting the multitude of deliverables throughout the project that will bolster the governance, management, and overall effectiveness of MPAs in the Baltic Sea region.

Over the course of the project, various components will be addressed to ensure that the approach to protection is holistic. The project involves an assessment of the existing legal frameworks governing marine protection efforts, and this analysis will be crucial for identifying gaps and areas for improvement in the regulatory landscape.

Additionally, the project will focus on evaluating the management effectiveness of existing MPAs by assessing their performance in achieving protection goals.

Moreover, the sufficiency of measures implemented within MPAs will be assessed to determine their adequacy in meeting targets. This involves evaluating the effectiveness of protection measures and identifying opportunities for enhancement.

To facilitate monitoring and evaluation efforts, monitoring guidelines will also be developed to enable systematic tracking of protection outcomes and progress. Capacity building among MPA managers was emphasized as a key focus area, so that their skills and capabilities to effectively manage and protect marine ecosystems are enhanced.

Ecosystem service analysis was also presented as another component within the project to assess the benefits provided by marine ecosystems and inform decision-making processes related to MPA management.

In addition, Jannica highlighted that the project involves modelling new species and habitat maps to improve spatial planning and identify priority areas for protection. And that, furthermore, the project aims to develop a coherence assessment toolkit to evaluate the connectivity and effectiveness of MPA networks in achieving protection objectives.

Climate change predictions and assessments of the distribution of human activities and pressures were also presented as crucial aspects of the project as they will be needed to identify areas of potential conflict and inform adaptive management strategies.

Finally, she discussed the development of a regional restoration action plan to guide restoration efforts aimed at enhancing the resilience and health of marine ecosystems.

Importantly, it was underscored that many of these components are co-created with stakeholders and end-users to ensure that they meet the actual needs and priorities of the Baltic Sea region. Ultimately, these efforts will culminate in the development of the Baltic Sea protection optimization framework, which will serve as a comprehensive tool for guiding protection and management efforts in the region.



*Figure 5: A visualization of the Baltic Sea Protection Optimization Framework. Each square represents a key deliverable with co-created deliverables, done together with end users, within the yellow frame. Dark green deliverables stem from the designation and governance objectives, light green deliverables from the management objective. Blue and dark blue are deliverables that will come as final products towards the end of the product.*

## Conclusion

In conclusion, Jannica reiterated the importance of collective efforts within the Baltic Sea region in addressing the impacts of the triple planetary crisis of climate change, pollution and biodiversity loss. Projects like PROTECT BALTIC and others under Mission Ocean play a pivotal role in achieving regional protection goals and restoring ocean health.

Attendees left the presentation with a deepened understanding of PROTECT BALTIC's objectives, strategies, and collaborative initiatives, poised to actively engage in discussions during the event's workshops.

The participants were asked for their take-home message from the presentation with the most common responses being the need for better collaboration and interlinks on a regional level, the need for a holistic approach to governance and management, the risk of losing out on the sea's value if action is not taken, and the need for a change in mindset about humanity's relationship with the sea.

## Mission Ocean presentation



*Image 2: Banner for EU Missions Restore our Ocean and Waters.*

The presentation on Mission Ocean was delivered by *Eduardo Carquejeiro*, a Policy Officer from the EU's Directorate-General Research and Innovation. The slides are available here: https://protectbaltic.eu/bsc2024-mission-ocean.

Eduardo provided a comprehensive overview of Mission Ocean, emphasizing its alignment with EU policies and the crucial role of research and innovation in addressing marine sustainability challenges. Within this context, the significance of projects like PROTECT BALTIC, which falls under the umbrella of Mission Ocean and contributes to its overarching objectives, was also highlighted. There was an emphasis placed on the need for projects like PROTECT BALTIC to collaborate with other Mission Ocean projects to maximize their impact and effectiveness in achieving common goals.

Eduardo highlighted the strategic framework of Mission Ocean, framing it within international agreements such as the 2030 Agenda for Sustainable Development and the global biodiversity framework. He underscored the mission's alignment with key EU strategies under the European Green Deal, including the EU Biodiversity Strategy to 2030 and the Climate Adaptation Strategy.

## Key components discussed:

Eduardo's presentation highlighted several key points:

**Policy tools:** He outlined three main instruments – the mission itself, the Horizon Europe work programme, and the Sustainable Blue Economy partnership – used to address marine-related challenges within the EU.

**Lighthouse areas:** Eduardo explained Mission Ocean's division into different sea basins or "lighthouses," each focusing on specific objectives, such as making the blue economy carbon-neutral and circular in the Baltic and North Sea Basin.

**Funding and projects:** He provided details on the allocation of public funding and partnerships with stakeholders to support Mission Ocean's objectives, including updates on funding calls and project initiations.

**Enabling mechanisms:** Eduardo discussed two key enabling mechanisms – the Digital Ocean and Waters Knowledge System – that facilitate the implementation of Mission Ocean through visualization models and knowledge sharing initiatives.

**Public mobilization:** He emphasized public engagement strategies like co-creation, citizen science, education and awareness initiatives, and community-driven business models, along with the dedicated portal for stakeholders to access information and participate in Mission Ocean activities: Mission Ocean and Waters service portal | Research and Innovation (europa.eu).

**Community building and political support:** Eduardo explained efforts to build a community around Mission Ocean, with high-level political support secured from various governments, and the Mission Charter serving as a tool for stakeholder involvement.

**Budget mobilization and events:** He provided insights into the total budget allocated to Mission Ocean and highlights of upcoming events aimed at promoting awareness, collaboration, and progress monitoring.

**Blue Parks Community:** He highlighted the European Blue Parks Community, its funding capacity and the portfolio of projects focused on the effectiveness of protecting and restoring marine areas.

*Image 3: Eduardo Carquejeiro presents Mission Ocean to participants during the opening plenary session.*

In his concluding remarks, Eduardo reiterated the importance of sustained commitment and collaboration in the long-term to effectively realize the objectives of Mission Ocean. He emphasized the critical role that Mission Ocean plays in advancing marine sustainability within the EU and highlighted the necessity of ongoing dedication and joint efforts to achieve its goals.

PROTECT BALTIC has endorsed the Mission Ocean charter and reaffirmed its commitment to ensuring the success of Mission Ocean through sustained collaboration and engagement.

## Collaboration with other projects

Attendees at BSC2024 were informed briefed on PROTECT BALTIC's collaborative efforts with other projects and had the opportunity to participate in MPA Europe's Regional Stakeholder Workshop later in the event. A dedicated report detailing the outcomes of this workshop is available later in this report.
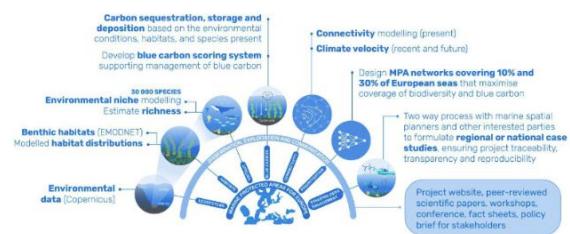


*Image 4: Cooperation is key in PROTECT BALTIC. The event showcased information on many of PROTECT BALTIC's sister projects during the virtual expo booth. MPA Europe also ran a dedicated regional stakeholder workshop during the day that participants could attend.*

Furthermore, the online platform used during the event featured a virtual expo booth where attendees could discover the work of the EU as the project's funder, Mission Ocean, PROTECT BALTIC's 16 partner organizations within the project (https://protectbaltic.eu/partners), and sister projects including MPA Europe, MSP4BIO, Blue4All, Biodiversea Life IP, eMSP NBSR, and BlueMissionBanos.



*Image 5: The virtual expo booth had dedicated spaces with links to websites and further information about PROTECT BALTIC's funders and 16 project partners.*
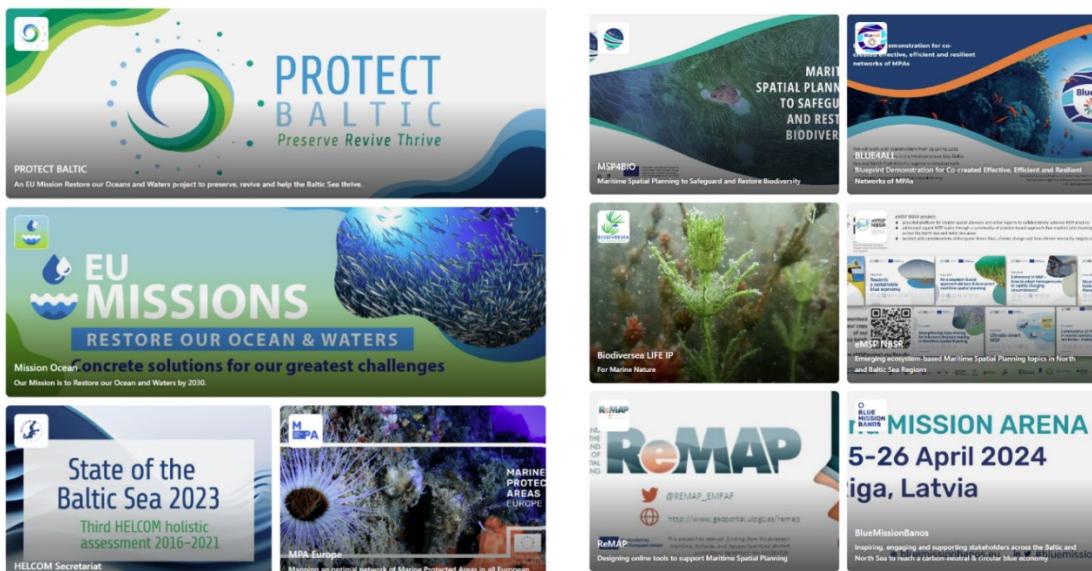
*Image 6: The virtual expo booths also had dedicated spaces with links to websites and further information about ongoing work by Mission Ocean, HELCOM and sister projects of PROTECT BALTIC.*

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# Workshops
## Morning sessions

## Management



*Image 7: Darius Daunys leads discussions during the in-person workshop on adaptive management effectiveness.*

### Overview

The management workshops were run in-person and online. The in-person workshop was split into two topics according to the project tasks. *Lasse Kurvinen* (WP6 lead for Restoration) from Metsähallitus Parks and Wildlife Finland facilitated discussions on the management guidelines. *Darius Daunys* (WP6 lead for Management) from Klaipeda University ran the discussions on management effectiveness. For the online workshop, *Jana Wolf* from Bundesamt für Naturschutz (BfN) led discussions on both topics.

The HELCOM-wide management guidelines play a crucial role in assisting Contracting Parties to effectively manage their MPAs and to promote harmonization across borders in management practices. However, the existing guidelines, established in 2006, require an update to reflect the significant advancements in scientific understanding, technological capabilities, and policy developments that have occurred in the nearly two decades since their inception.

Central to the need for an update is the concept of management effectiveness (ME), which serves as a cornerstone for evaluating the success of protected areas in safeguarding their

values and achieving their goals and objectives. The framework for ME assessment, initially articulated by the International Union for Conservation of Nature (IUCN) in 2006 (Hockings et al.), remains influential. However, a contemporary approach must reflect the evolving landscape of science and practice.

Management effectiveness assessment covers three key dimensions:

**1. Context:** assessing the existing status of threats and values within the MPA, as well as the alignment of management targets with protection priorities. Understanding the contextual factors is essential for tailoring management strategies to address specific challenges and opportunities present within each MPA.

**2. Adequacy of management efforts and processes:** evaluating the effectiveness of management strategies and the robustness of governance structures in place within the MPA. It considers aspects such as stakeholder engagement, resource allocation, and adaptive management practices, aiming to ensure that management efforts are efficient, transparent and responsive to changing circumstances.

**3. Delivery of protection:** focuses on assessing the tangible outcomes of management interventions in terms of their contribution to the protection of key features and species within the MPA. It examines the extent to which management measures are implemented effectively and the degree to which protection goals are being realized, providing insights into the overall effectiveness of MPA management.

## Methodology

The workshop began with an overview contextualizing the session topics within PROTECT BALTIC, followed by consensus on the workshop's objective: facilitating the contribution of participants towards formulating management guidelines and developing a method for assessing management effectiveness.

Participants were briefed on the session's structure, comprising two segments – one for each of the two topics:

The first introduced management guidelines, followed by group discussions addressing three provided questions. The session then concluded with a succinct summary and a discussion.

And the second gave a brief introduction to management effectiveness, followed by the categorization of participants into four groups based on their current affiliations: researchers, non-governmental organizations (NGOs), industry-related sectors, and governance bodies (e.g. authorities, agencies).

Each group was presented with a common question, accompanied by guidelines for formulating ranked opinions during group discussions. Following group deliberations and the presentation of their opinions, a collective discussion ensued, focusing on discerning major differences and similarities among the group perspectives.

For the online session, there were some technical difficulties that unfortunately delayed the start of the session. Once started, participants were provided with a general introduction outlining the workshop's objectives and the division into two thematic parts: guidelines and effectiveness. Using a Miro board, participants then engaged in group discussions addressing respective questions, with notes taken digitally. Slido served as a voting tool, facilitating participant engagement by allowing answers to be ranked during group discussions.

Additionally, online participants were also subdivided into four sector groups—NGOs, research, national authorities/ministries, and other (industry/consultants)—to ensure diverse perspectives were represented during the ranking process.
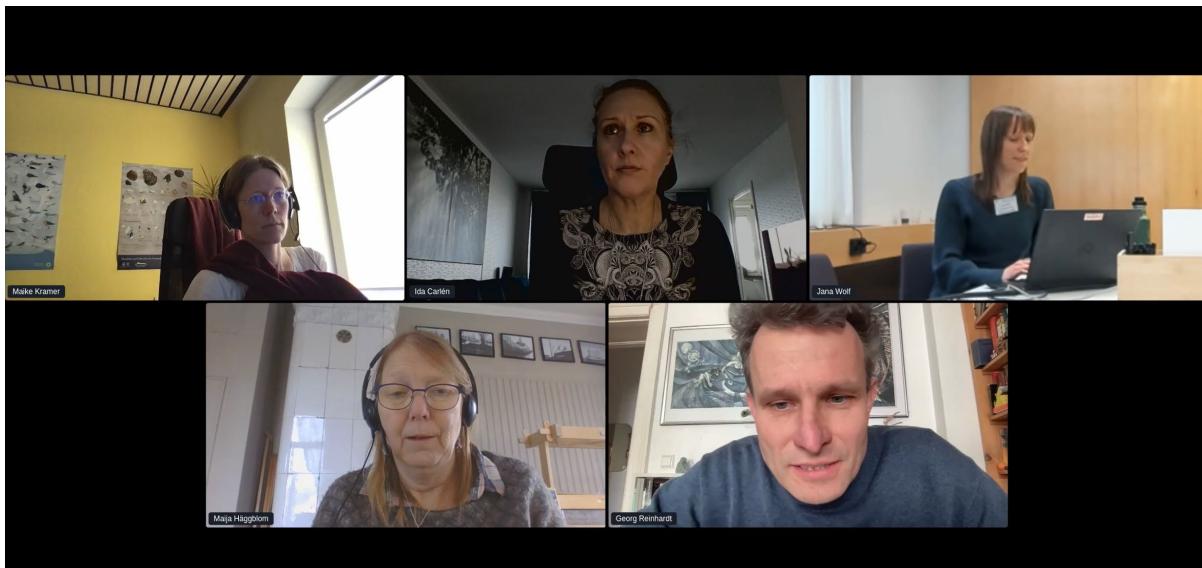


*Image 8: Participants offered diverse perspectives during the online adaptive management workshop.*

## Which tools would be most useful for receiving information?

The majority of participants favoured in-person meetings and workshops as the optimal platforms for interaction, recognizing their capacity to facilitate meaningful engagement.

During the in-person session, preferences varied regarding the specific methodologies employed, with some advocating for targeted approaches such as interviews and others emphasizing the versatility of using multiple methods based on the contextual needs. Events tailored to specific audience sectors were often deemed advantageous, although there was recognition of the value of cross-sectoral or multi-stakeholder gatherings.

In contrast, the online participants expressed no distinct preference and identified various tools as useful for information dissemination, with a slight inclination towards webinars.

## Which tools are most useful for engaging?

Participants across both the in-person and online workshops shared a preference for in-person events for engaging actively in processes. They emphasized the value of physical workshops for fostering meaningful interaction and collaboration. This sentiment was

particularly echoed by online participants, who acknowledged the limitations of virtual engagement in comparison to face-to-face interactions.

Furthermore, there was a consensus among participants that adopting a bottom-up approach would enhance the quality and depth of discussions. They highlighted the importance of involving stakeholders from diverse backgrounds and perspectives in the decision-making process, as this promotes inclusivity and ensures that a wide range of viewpoints are considered. By starting discussions at a grassroots level and allowing input from all relevant stakeholders, participants believed that more holistic and effective solutions could be developed to address complex challenges.

## What do you think should be the focus of the management guidelines?

The participants collectively identified a combination of aspects crucial for effective management within the updated guidelines. Foremost among these was the need to intricately define and describe protection features, targets and measures. They emphasized that these components are interconnected and should be addressed as a cohesive package, recognizing the inherent interdependence among them.

Additionally, there was unanimous agreement across both sessions on the importance of having guidance on engagement and collaboration. Similarly, enforcement mechanisms were deemed essential for ensuring compliance with regulations and safeguarding the integrity of MPAs.

One group specifically highlighted the significance of adaptive management, emphasizing the need for flexibility and responsiveness to changing environmental conditions and emerging threats.

Moreover, online participants raised the question of whether incorporating a dedicated chapter on restoration within the updated management guidelines would be beneficial. They expressed interest in exploring restoration strategies as a means of enhancing ecosystem resilience and promoting habitat recovery within MPAs.

## What are the necessary elements of management to be covered by the management effectiveness assessment of an MPA?

Three distinct groups of participants comprising researchers, NGO experts, and representatives of governing bodies agreed that the status of protection features should be the highest priority for management effectiveness (ME) assessment. Conversely, industry representatives emphasized that clarity on management measures and targets should be the highest priority for effective assessment.

While individual groups highlighted additional factors such as the implementation of management plans, sectoral empowerment, and financing, there was a collective emphasis on the importance of monitoring as a crucial ME element, particularly in assessing threats, protection measures, and management actions. Similarly, discussions within the online group yielded similar results, with a focus on improving the state of species and ecological

functions, alongside the need for efficient measures that comprehensively address all relevant activities, and which ultimately are sufficient enough to contribute to enhancing the status of species.

During a ranking exercise through Slido, measures emerged as the most crucial element to be covered by ME assessment according to three of the four sectors (NGO, research, Other), while national authorities highlighted the necessity for clearly defined objectives.
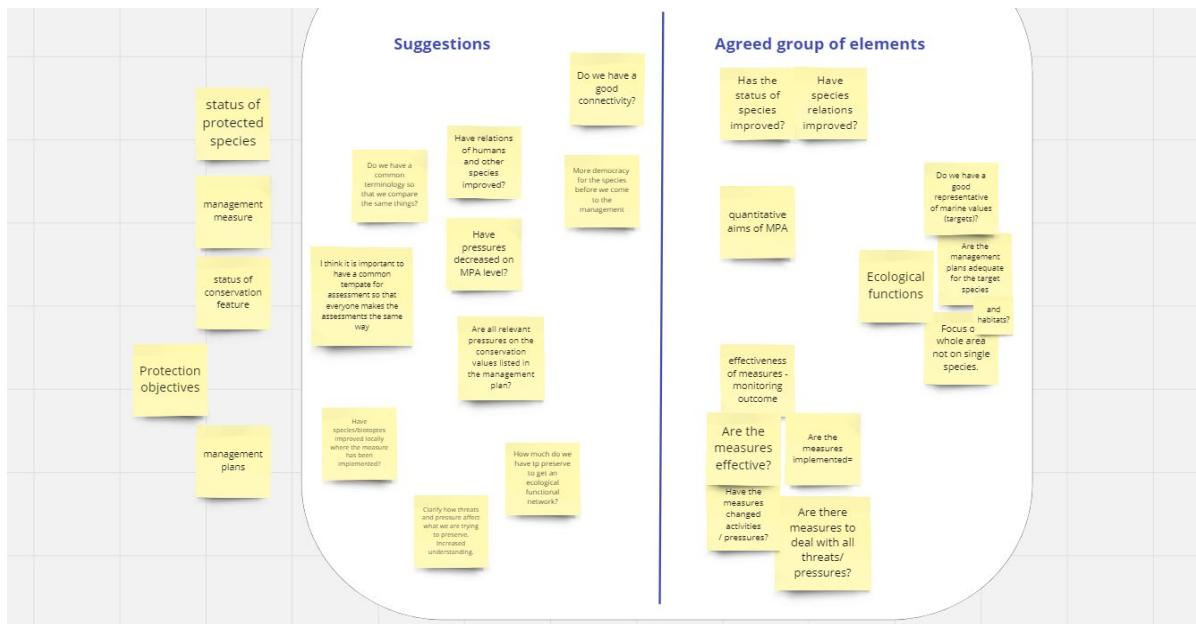


*Figure 6: Miro board depicting the necessary elements of management to be covered by management effectiveness assessment of MPAs.*

## Who should carry out management effectiveness assessment for MPAs?

During the online session, participants discussed about the most suitable entities to conduct management effectiveness assessments (MEAs). Several possibilities were explored, including regional level authorities, national authorities, individual MPA managers, insiders with a deep knowledge of each MPA, neutral outsiders, and species ambassadors. Additionally, the potential for combinations of these options, such as collaborations between national authorities and MPA managers was raised and discussed extensively.

Throughout the discussion, each of the proposed alternatives was analyzed in terms of their advantages and disadvantages. For instance, a neutral outsider was considered to potentially provide a more objective assessment, but their lack of detailed knowledge about each MPA could lead to more time-consuming evaluations and the potential oversight of specific shortcomings known only to individual managers or experts. On the other hand, insiders with a deep knowledge of each MPA were recognized for their ability to provide nuanced insights but could face challenges in maintaining objectivity.

Ultimately, the discussion did not yield a clear consensus among participants. Instead, the diverse viewpoints highlighted the complexity of MEA and underscored the importance of carefully considering the strengths and limitations of each approach. It became apparent

that the most effective MEA processes may involve a combination of different actors and approaches tailored to the specific context of each MPA.

## How should the management effectiveness result look?

During the online discussion, participants explored various options for assessing the management effectiveness of MPAs in the Baltic Sea region. These options included:

1. **Ranking of MPAs:** according to their effectiveness, potentially providing a comparative assessment of their performance.
2. **An overall score for each MPA:** assigning a single comprehensive score to each MPA, capturing its overall management effectiveness.
3. **Detailed reports:** generating detailed reports for each MPA, providing in-depth analyses of their management practices and outcomes.
4. **Scores for each assessed element of MPA management:** assigning separate scores to various elements of MPA management, such as the implementation of measures, addressing all relevant activities, and improvements in ecological state.

Additionally, participants proposed assessing non-classical elements, such as the MPA's contribution to enhancing community for humans and the environment. However, they acknowledged the inherent challenges in evaluating these abstract aspects within the framework of MEA.

Overall, participants concluded that a combination of scores for individual elements of MPA management, supplemented by additional detailed information where necessary, might offer the most desirable outcome for MEA.

## Summary of overall input and impressions from the Management workshop

### Management guidelines

During discussions on management guidelines, participants largely aligned in their views, highlighting the preference for in-person events as optimal platforms for receiving information as well as fostering engagement.

There was consensus on the key topics to be addressed in updating the MPA management guidelines, with a strong emphasis on providing further guidance on a comprehensive package encompassing protection features, targets, and measures.

Online participants emphasized the need for additional focus on enforcement and collaboration aspects within the guidelines. Interestingly, differing perspectives emerged on the scope of these guidelines, with some advocating for sections addressing measures outside of MPAs. There is also a need to assess if guidance on private sector involvement in MPA management would be needed.

## Management effectiveness

Group discussions on management effectiveness underscored the complexity of the topic, evidenced by the varied intensity and duration of discussions, as well as the diversity of opinions expressed.

While a few ME elements were jointly highlighted by multiple discussion groups, it became evident that different user sectors may prioritize different aspects in assessing the effectiveness of protected areas. Management measures emerged as a recurring theme, but the significance of various contextual factors for MPA management success varied among different groups.

The question of who should be responsible for assessing management effectiveness for MPAs yielded a range of perspectives, with their own advantages and disadvantages, resulting in no clear consensus emerging from the discussions.

Participants favoured including various aspects in the results of MEA for each MPA, such as scores for individual elements of MPA management (e.g. state, measures, activities), enhanced by more detailed supplementary information where necessary. This comprehensive approach aims to provide a nuanced assessment for MPA effectiveness while accommodating the diverse range of factors influencing management success.

## Key findings:

### Preferred tools for planning MPA management

Stakeholders across both online and in-person workshops overwhelmingly favoured in-person meetings as their preferred tool for MPA management planning processes. They emphasized the importance of early stakeholder involvement and the real opportunity for meaningful engagement that in-person meetings afford.

However, stakeholders also recognized the potential need for tailoring different methods to suit the diverse needs of various stakeholder groups, prompting consideration of whether guidance on this aspect should be included in the updated guidelines.

Additionally, there was consensus on the importance of incorporating modern facilitation methodologies into the guidelines to ensure effective planning processes.

### Focus of updated management guidelines

Stakeholders from both online and physical sessions emphasized the significance of focusing on a combination of describing and defining protection features, targets, and measures. This holistic approach is seen as crucial for guiding effective MPA management practices.

### Priorities for management effectiveness assessment (MEA)

Industry representatives emphasized the importance of clarity regarding MPA targets addressing human activities and protected features, as well as clarity in defining and implementing management measures. On the other hand, other stakeholder groups

prioritized assessing the status of protection measures in the MEA process.

## Presentation of MEA results

Most participants agreed that MEA results should be available as individual scores for each assessed element of MPAs, including state, activities, measures, etc. They also favoured the option of accessing more detailed information through supplementary materials, such as comprehensive reports, to provide a more nuanced understanding of MPA effectiveness.



*Image 9: Participants in the Management workshop delve into discussions on management guidelines facilitated by Lasse Kurvinen.*

## Spatial modelling



*Image 10: Roland Pesch ran the in-person spatial modelling workshop discussing with stakeholders their expectations for spatial modelling products within PROTECT BALTIC.*

### Overview

The in-person spatial modelling workshop was led by *Roland Pesch* (WP3 lead for Spatial modelling) from Jade Hochschule, the lead for Work Package 3 in PROTECT BALTIC. The online workshop was facilitated by *Antti Takolander* from the Finnish Environment Institute (SYKE).

The workshops aimed to solicit valuable insights from stakeholders on their expectations regarding spatial modelling products that are to be produced under PROTECT BALTIC, defining methodologies to quantify uncertainties inherent in the modelling process, as well as finding ways to address potential discrepancies that may arise between modelling outputs generated under PROTECT BALTIC and national modelling efforts.

### Methodology

The workshop was structured into three group discussions lasting 15 minutes each, accommodating 4-5 individuals per group, both in person and online. Following these discussions, there was a collective wrap-up session lasting 10 minutes involving all participants.

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Throughout the workshop, participants shared their insights and ideas using a Miro board, which served as a collaborative platform accessible to all participants, regardless of their location.

Despite encountering technical challenges during the online segment, where the facilitator's voice echoed in his earphones, the breakout rooms functioned smoothly without any technical glitches.

## Considering what kinds of spatial modelling products on species, habitats and biotopes exist currently, what do you see as the main gaps in the current situation?

Online participants highlighted that national-level maps exist in various countries, albeit with differing temporal and spatial resolutions, which presents a significant challenge when trying to combine them. A key shortfall in current data availability pertains to the absence of connectivity assessments, a lack of uncertainty quantification in modelling outputs, and climate change impacts on species (i.e. which species should protection efforts be focused on?).

Fish, in particular, were identified as a species group for which there is limited data availability. Moreover, the prevailing geopolitical situation may further hinder access to high-resolution spatial data, particularly regarding bottom substrate.

There was substantial convergence between the outcomes of the online and in-person sessions. The disparity in spatial and temporal resolutions among existing national data products was identified as a major obstacle to producing harmonized and widely accepted Baltic Sea-wide maps.

Additionally, the scarcity of regional data emerged as a central concern. Furthermore, the diverse standards and classification systems could pose difficulties in harmonizing data products. Depending on the application, aligning data modelling products with established classification systems such as EUNIS and HELCOM HUB was discussed.

Terms such as habitat, biotope, and biogenic habitat should be clearly defined at the project's outset.

*Image 11: Antti Takolander (top row, middle column) from SYKE leads discussions with the online group on the kinds of spatial models and output they would find most useful and the resolutions that might be needed.*

## What kind of spatial models or outputs would be most useful and in what resolution? How should uncertainty be assessed and provided in the modelling output?

Online participants stressed the importance of having high spatial resolution, aiming for as fine as 25 metres for sessile species and phytobenthos. However, for more mobile species like birds and fish, they found that a coarser resolution, around 10-15 kilometres, would suffice.

They noted that the temporal resolution should align with species traits, with mobile species requiring higher temporal fidelity. Overall, they emphasised the importance of tailoring resolution to specific contexts and striving for maximum detail to enhance management efforts. Furthermore, they expressed a desire for uncertainty maps, which could be generated through comparative analysis of model output with species observations or through independent validation using underwater videos or drones.

Meanwhile, the in-person attendees recommended a raster resolution of approximately 1 kilometre for benthic species, suggesting the use of equal-area hexagons as an alternative to traditional grid cells. They proposed mapping over 5-10-year intervals to adequately capture climatological variations and underscored the importance of accounting for seasonal changes. Additionally, they suggested expanding modelling efforts beyond species distribution to include aspects of biodiversity such as diversity indices.

Ensuring alignment between calculated species abundance patterns and known species ranges, particularly for fish, birds, and mammals, was highlighted as crucial in species distribution modelling. The integration of industry data and the consideration of various depth zones (surface, near seabed) and physical-chemical gradients (oxygen, temperature) were also deemed essential for comprehensive modelling.

Participants stressed the significance of confidence and uncertainty assessments. They discussed approaches like the EMODnet method, where confidence assessments are integrated as a separate map layer alongside habitat maps like those from EUNIS, to address this need.

## What kind of challenges do you see in the harmonization between national models and mapping products, and Baltic-wide modelling outputs? How can these potential problems be alleviated?

The main potential issue for harmonization was the availability and characteristics of the data. Data collected across different countries have been gathered using diverse methods, potentially leading to differences in taxonomic nomenclature. National restrictions on data sharing impede efforts to consolidate all data into a common database in a uniform format. Participants stressed the importance of data standardization, particularly regarding metadata, and advocated for the establishment of a unified database for storing all data.

In-person attendees reiterated concerns about varying data densities and resolutions in primary input data, which could affect the quality of spatial models. They noted that different regions of the Baltic Sea might require different raster resolutions due to variations in spatial variability and complexity. One suggested solution was to adopt a nested resolution modelling approach aligning raster resolution with both data density and biological complexity.

Integrating biotope or habitat mapping products into Baltic Sea-wide maps may face challenges due to potential systematic differences between national and international classification systems, as well as differing standards in mapping and interpretation. Converting classification systems may be necessary to address these disparities.

Participants highlighted the potential for national mapping authorities to collaborate on joint products to facilitate integration. Emphasis was placed on the importance of transboundary collaboration and multi-disciplinarity.

Additionally, they stressed the need for maps to be easily understandable and thoroughly documented with metadata, utilising standards such as those found in OBIS, GBIF, and Darwin Core. Applicants were encouraged to review the metadata before using the mapping products.
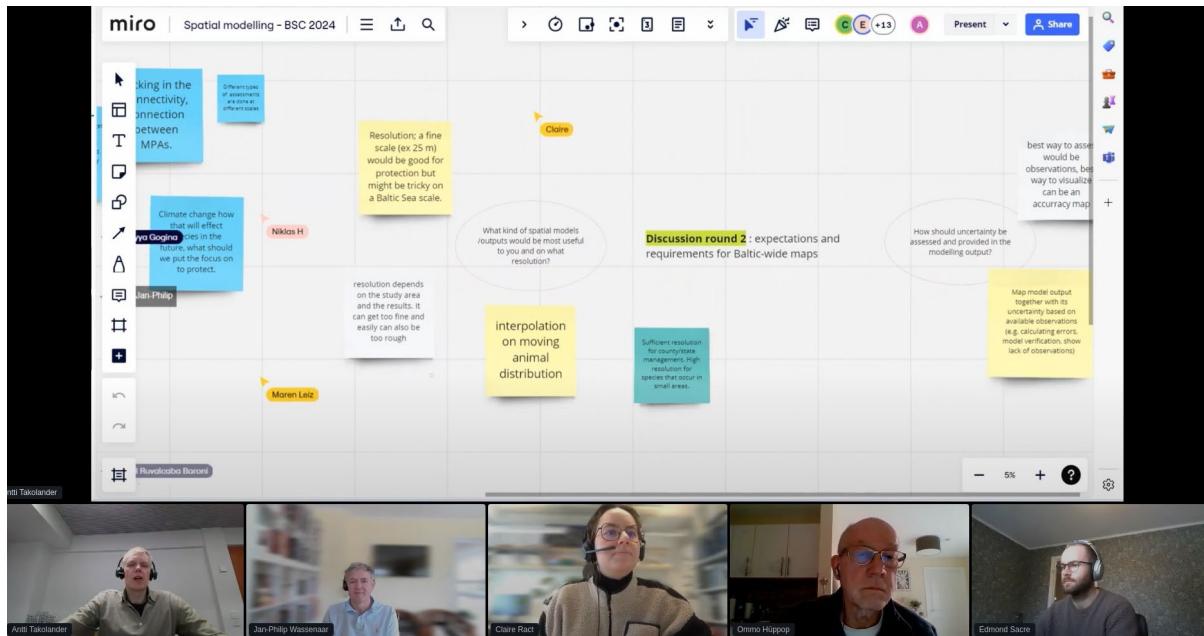
*Image 12: The online group use a Miro board to co-create their views on what the requirements should be for Baltic-wide maps.*

## Summary of overall input and impressions from the Spatial modelling workshop

Despite potential differences between future PROTECT BALTIC modelling outputs and national models, stakeholders see many benefits in the PROTECT BALTIC modelling efforts. They believe these models could help address gaps related to connectivity and climate change impact assessment. Although collating national data into a common format may pose challenges, it's deemed highly valuable. Stakeholders expressed a keen interest in staying connected with the project and accessing the data once available.

Data characteristics emerge as a primary challenge in harmonisation. Data collected across different countries may vary due to differing collection methods, making comparisons difficult. While it's ideal to standardise data across regions, this may not be the case throughout the Baltic Sea region. A collective framework for storing and aggregating all data into a common format is necessary to facilitate data sharing, integration, and analysis across the region.

Varying availability of observational data on species could potentially hinder the production of valid and accepted maps. To address this, stakeholders suggest considering alternative mapping approaches, such as nested sampling mapping. This approach could accommodate varying levels of available data, thereby enhancing the reliability of resulting maps.

From the stakeholders' perspective, confidence assessments are crucial for describing the spatial certainties of mapping products within PROTECT BALTIC. In addition to modelled maps, such as abundance patterns of benthic species, stakeholders stress the importance of generating and presenting confidence or uncertainty maps alongside the modelling product.

This ensures transparency and helps stakeholders understand the reliability of the provided data.

## Key findings:

### The need for a common format

A collective framework for storing and aggregating all national data into a common format was seen as crucial by the attendees. Within PROTECT BALTIC technical data integration is ensured by WP2 where all data acquired is structured in a given spatial database structure.

### Avoiding bias

Before making use of primary data for the modelling aspects like comparability, different methods should be taken into account. Otherwise, maps produced will be biased and not be reliable for decision making.

### Following a common conception approach

When producing maps on habitat and biotope types, a common conception approach could be followed relying on a given classification system such as HELCOM Hub. At the least, clear definitions should be defined on mapping criteria like habitat, biotope, biogenic habitats, and ecosystems, so they can be consistently mapped in space and time. Assessment of uncertainty in model outputs should also be provided, preferably as spatial layers (maps), produced by comparing observations.

### Adequate spatial resolution

It should be ensured that all parts of the Baltic Sea region are represented by an adequate spatial resolution of species data. If not the case, alternative mapping approaches should be taken into account. A nested modelling approach could offer a solution to some of these potential challenges. By incorporating nested levels of spatial detail, this approach may allow for the integration of data with varying resolutions and availability, effectively accommodating differences across regions within the Baltic Sea. In PROTECT BALTIC Work Package 3, such an approach could be tested through a pilot study, assessing its applicability and identifying potential limitations before making use of the approach within the project.

### Access to data

Stakeholders have expressed interest in staying connected to the project and would be interested in accessing the data output when available. In this way, the acceptance of the modelling output from PROTECT BALTIC for stakeholders can be optimised.

### Further outreach

As stakeholders present either online or in-person did not cover all countries and relevant institutions a further outreach to other potential stakeholders could take place. Formats to be applied could be email correspondences through newsletters or direct contacts and/or webinars or online meetings. In this way, PROTECT BALTIC can maximize its impact and relevance to stakeholders across the Baltic Sea region.

## Ecosystem services and valuation



*Image 13: Participants in the in-person ecosystem services workshop discuss the importance of ecosystem function and integrity.*

### Overview

The in-person workshop was facilitated by *Lois Watt* (WP4 lead for Ecosystem services) from the HELCOM Secretariat and *Jolanda Linsén* from Åbo Akademi University. The online workshop was led by *Aino Ahvo* from the HELCOM Secretariat and *Susanna Jernberg* from the Finnish Environment Institute (SYKE).

Ecosystem services can be broadly defined as the goods and benefits which humanity receives from ecosystems (MA, 2005). Marine ecosystems provide essential services that sustain life on Earth, making them vital for ecological balance and human wellbeing. These services can be either biotic or abiotic, and according to CICES V5.1 & V5.2 (2023), they can be classified into three core types.

These types are:
- **provisioning services** – referring to various things directly obtained from ecosystems. Such as foodstuff, medicine, building materials;
- **regulation and maintenance** services – largely concerned with the biological and geophysical processes which contribute to well-functioning environments such as nutrient cycling and carbon sequestration; and
- **cultural services** – broadly refer to the various culturally and socially constructed ways in which human societies relate to ecosystems and how such relationships provide various forms of value to human life. Examples of cultural ecosystem

services include things like recreation, aesthetics, sense of place, and education (CICES, 2023).

The concept of ecosystem services provides a framework to which these essential benefits can be valued according to their importance across society through both monetary and non-monetary approaches. As such, ecosystem services demand interdisciplinary collaboration to bridge ecological systems with human ones, as well as to understand the impact of measures which may be taken to protect the supply of such services (i.e. through MPA and/or OECM designation). The ways in which people come to value and appreciate these services is incredibly complex, and there are multiple methods which can evaluate these different forms of value (Scholte & Verburg, 2015; Börger, et al., 2014).

The Baltic Stakeholder Conference 2024 aimed to bring together various stakeholder groups who have a stake in the future of the Baltic Sea. Through this assembly, WP4 sought to evaluate how the attending sectorial groups perceive the ecosystem services which the Baltic Sea provides, as well as better understand how the value of such services can be understood. Two workshops were planned to delve deeper into stakeholder perceptions. WP4's broad aims of these workshops were:

**Aim 1**
Promotion of ocean literacy on marine ecosystem services (in relation to MPAs).

**Aim 2**
Information collection: providing stakeholders with a dynamic space to exchange perspectives and provide critical insights to WP4's work on Baltic Sea ecosystem services.

## Methodology

There were two dedicated workshops held on the topic of ecosystem services. One was held onsite at the conference space, while the other was held simultaneously online. The duration of both workshops was two hours.

The agenda for the workshops was set as follows:

*Table 1: Outline of workshop agenda and timing.*

| Section | Method/agenda | Duration (Min) |
|---|---|---|
| 1. | Introduction to the workshop: presented by primary facilitators of the workshops | 10 |
| | First round of group poll questions | 5 |
| | Presentation on ecosystem services – what are marine ecosystem services? | 10 |
| | Second group poll and space for questions | 5 |
| 2. | Small group work | 60-75 |
| 3. | Return to group: discussion in large group on small group work | 15 |
| | Third group poll: feedback on workshops | 5-15 |

Before the conference, a plan was developed by *Lois Watt*, the lead of WP4 at the HELCOM Secretariat and disseminated through the work package partners for feedback and revision. A final methodology was used which employed a mixed-method approach comprised of targeted focus groups, participant observation, anonymous group polling – using the questionnaire software, Slido – as well as unstructured, larger group discussions.

To keep the results of both workshops comparable, the methodology was designed to be as similar as possible for the in-person and online events. Miro, a digital whiteboard tool, was used to structure the online workshop as closely as possible to the in-person one.

The participants were randomly sorted into their focus groups for both workshops. For the in-person workshop, three groups of four and one group of three were randomly selected. Online, there were two groups of three, one of four and one group of five which worked on questions 1-3a (see Table 6) before shifting to a group discussion.

## Difficulties

## Online moderation and monitoring

Due to the practicalities of overseeing a workshop online, as well as the fact that the digital participants were not physically present in the same space as those onsite, the outputs of the online workshop were expected to be slightly different to those gathered in person. It was expected that some of the online participants would leave the discussion at various points of the workshop – a limitation which is less severe for the in-person workshop.

Moreover, the ability for the facilitators to act like '*flies on the wall*' and take notes of the small group discussions was severely hampered by the online platform used for the conference. Some technical difficulties occurred on the day which made the online focus groups impossible to handle and monitor. For instance, after question 3b of the small groups of the online workshop, a technical problem rendered it impossible to continue in the groups. As a result, facilitation was shifted so that the facilitators led the entire group through the discussion on one single working board.

As such, not all the focus group questions were discussed in the online workshop.

Despite these difficulties, the overall structure of the workshops proved effective at eliciting in-depth discussions from the groups on the targeted question areas, and the method developed was effective for the in-person workshop, in particular.

The four multisite methodologies used were:

**1. Anonymous targeted group polling (using Slido)**:
When working with 'stakeholders', one aspect which may prove difficult is the fact that they can find it hard to discuss ecosystem services from the perspective of their sector. In some cases, a person may wish to answer from their own perspective rather than that of the sector they represent through their work.

One way to address this was by including anonymous group polling, whereby participants could provide 'free' answers to the questions provided without any inhibitions. This format also acted as an ice breaker to the topic, with questions presented that were approachable. This also enabled the facilitators to get a better sense of the room, in that they were better able to understand the level of knowledge and variety of perspectives present.

By posing a Slido question before and after the presentation on ecosystem services, facilitators were able to both get a sense of participants immediate positions, as well as their thoughts after the presentation, which supplied some very basic knowledge on the concept and terms surrounding ecosystem services.

**2. Focus groups:**
Focus groups are a foundational method in social scientific research which can prove incredibly fruitful at producing dynamic discussion between individuals (Liamputtong, 2011).

When considering the diverse group of stakeholders who were present at this conference, it was decided that a division of small groups would create fruitful spaces for deliberation on the decided questions. Present at each in-person group table was a collection of large, A3 cards which each held a question to be discussed within the group.

Online, these questions were replicated. While some of the questions were intended to be answered individually and others collectively, it was noted that the groups continued to discuss their thoughts on the questions before making individual decisions. This would likely be difficult to recreate in a larger discussion.

**3. (Onsite) – Participant observation:**
Onsite, after the focus group discussions took place, WP4 partner, Jolanda Linsén (Åbo Academy University), rotated each table and took notes of the groups discussion over the discussion period using participant observation.

This is another commonly used social scientific method (Musante & DeWalt, 2011) which, in this context, allowed WP4 to get a better sense of the context in which the groups discussed the questions. This reinforces the responses which stakeholders left on their worksheets and allows for greater depth in the analysis phase, through the identification of common themes from the surrounding conversation to the group work.

**4. Open, unstructured discussions:**

Methods 1 and 2 present a highly structured means to direct stakeholder attention and input. These methods also ensure some level of balance in the discussion between stakeholders. However, when considering the co-creation and literacy aims of the workshop, it was also important to provide space for the participants to present points which they may feel were not answered.

Time was allocated to this open space for discussion at the end. However, as tends to be the case with unstructured time, only a few people had time to speak in this time. The points raised shall be discussed to further develop the workshop methodology for the future.

## CICES V5.2 (2023)

As part of the developed methodology, many of the workshop questions revolved around a list of ecosystem services that the stakeholders would discuss. In the planning phase, it was decided that a simplified version of the CICES V5.2 ecosystem service list should be used as working material for the participating stakeholders.

The full CICES list can be found at https://cices.eu with a draft version available for download. Those service categories which do not apply to marine contexts were omitted, and it was decided that only biotic services would be included due to the focus of the project, as well as to avoid overwhelming the participants with the complete list of biotic and abiotic services. The simplifications of the CICES list of ecosystem services used for this workshop were compiled by Susanna Jernberg (Finnish Environment Institute (SYKE)).

Moreover, when explaining the Ecosystem Service Cascade Model (Potschin-Young, et al., 2018), a space for confusion was identified in understanding an ecosystem *'service'* and final *'benefit'*. It was decided that this distinction between the action or element provided by an ecosystem and its perceived benefit was too complex for stakeholders, in that the discussion usually leads to the importance of the perceived benefits that a service provides. Therefore, these two points were conflated in the cascade to minimise confusion to the stakeholders. However, the cascade was explained fully in the presentation, so stakeholders received the full picture of how ecosystem service evaluation is approached through this model. The presentation is available here: https://protectbaltic.eu/bsc2024-eco-services.

The final services used in the workshops were as follows:

*Table 2. Adapted list of ecosystem services for workshops.*

| CATEGORY | ECOSYSTEM SERVICE |
|---|---|
| PROVISIONING | **Plant aquaculture for nutrition, materials, or energy**<br>Examples: seaweed grown on ropes for use in cosmetics, vitamin supplements, energy, fertilizers etc. |
| | **Animal aquaculture for nutrition, materials, or energy**<br>Examples: fish or mussels etc. farmed for food, biogas, food supplements etc. |
| | **Wild plants for nutrition, materials, or energy**<br>Examples: wild plants harvested for food, supplements, energy etc. |
| | **Wild animals harvested for nutrition, materials, or energy**<br>Examples: wild animals harvested for food, cosmetic supplements such as zooplankton for collagen, feed for reared animals (herring in the Baltic Sea) |
| CULTURAL | **Recreation**<br>Examples: characteristics of living systems that enable passive and active interactions with the natural environment and activities such as walking, swimming, enjoying nature, bird watching etc. |

| | | |
|---|---|---|
| | **Scientific investigation or the creation of traditional ecological knowledge**<br>Examples: research of species/ecosystems for increasing knowledge about the environment and nature | |
| | **Education and training**<br>Examples: ecosystems and species used for education and training to improve skills or knowledge about environment | |
| | **Culture or heritage**<br>Examples: local identity, elements in nature that help people identify with the history or culture of where they live or come from, may also benefit tourism | |
| | **Aesthetic experiences**<br>Examples: area of outstanding beauty, beautiful scenery etc. | |
| | **Entertainment or representation**<br>Examples: entertainment of nature through films and books, indirect: happens elsewhere than in nature | |
| | **Symbolic meanings & sense of place**<br>Examples: using nature as national emblems or referencing particular areas as distinctive | |
| | **Spiritual and/or religious meaning**<br>Examples: elements in nature with spiritual or religious importance to people, totemic species etc. | |
| **REGULATION & MAINTENANCE** | **Reduction of nutrient loads and mediation of wastes**<br>Examples: bio-remediation or filtration/sequestration/storage/accumulation or reduction of wastes, harmful substances and nutrients from anthropogenic origin | |
| | **Erosion control**<br>Examples: the capacity of vegetation, biogenic reefs etc. to prevent or reduce erosion | |
| | **Flood and storm surge mitigation**<br>Examples: protecting people from flooding, attenuation of wave energy and flood prevention by algae, vegetation, or reef structures | |
| | **Gamete dispersal**<br>Examples: in the context of societal efforts for the restoration of, for example, seagrass beds, seed dispersal can occur through this service rather than artificially | |
| | **Maintaining or regulating nursery populations and habitats, breeding grounds (Includes gene pool protection), refuge habitats or feeding grounds**<br>Examples: important fish feeding habitats | |
| | **Pest and disease control**<br>Examples: providing a habitat for native pest control agents, presence of native disease control agents such as microbial antagonists for the control of postharvest diseases | |
| | **Regulation of soil quality**<br>Examples: sediment nutrient cycling | |
| | **Regulation of water conditions**<br>Examples: controlling the chemical quality of freshwater | |
| | **Climate regulation**<br>Examples: carbon storage and sequestration | |

## Group polling

## List of questions

*Table 3: List of Slido questions.*

| Section | Order | Question | Answer type |
|---|---|---|---|
| 1. | a | Why did you choose this workshop? | Multiple choice |
| | b | How familiar are you with ecosystem services (ESs)? | Scale |
| | c | With your experience level in mind, what do you hope to gain from this workshop? | Open text |
| 2. | d | What do you think of when you hear the term 'Ecosystem Services'? | Word cloud |
| 3. | e | How do you feel after this workshop? | Scale |

### Why did participants choose this workshop?

Most attendees in both workshops were driven by curiosity and a desire to delve deeper into the concept of ecosystem services. Some sought to contribute their own perspectives and insights. Notably, one participant aimed to question the notion of ecosystem services, adding an intriguing layer of diversity to the discussions and reflecting a wide spectrum of viewpoints within the workshop.
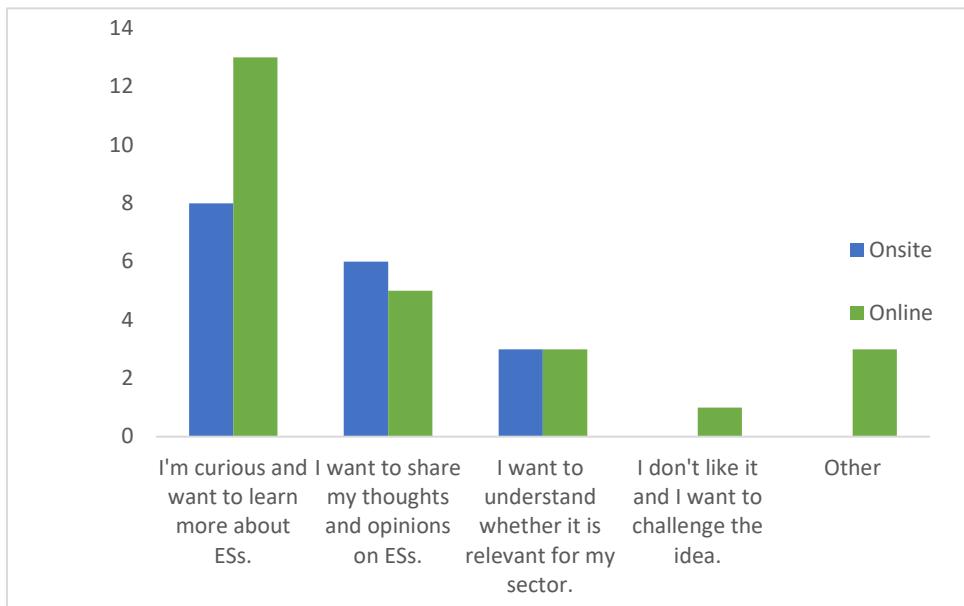


*Figure 7: Why did participants choose this workshop? Online (n=19) and onsite (n=14). Respondents could give multiple responses.*

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## How familiar are participants with ecosystem services?

Many of the attendees of the workshops considered themselves to be relatively knowledgeable with the concept of ecosystem services, with most of the answers ranging from 3-5 on the scale (where 1 = no knowledge and 5 = expert).
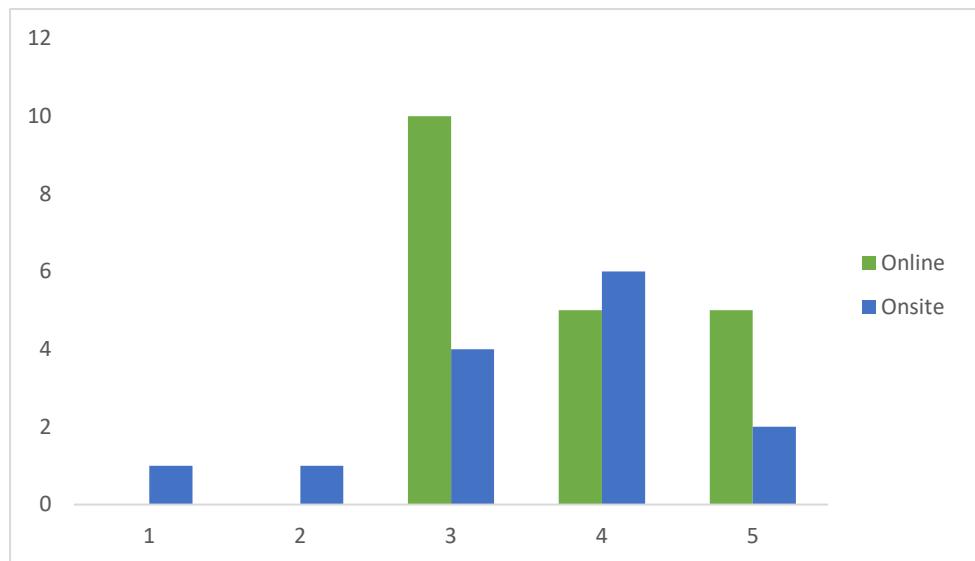


*Figure 8: How familiar were participants with ecosystem services? The amount of participant answers is indicated on the vertical axis. In total there where 34 participants; onsite (n=14) and online (n=20). The horizontal axis indicates familiarity with ecosystem services where 1 = no knowledge, 5 = expert.*

Additionally, most wanted to learn more about the concept and provide input rather than challenge or critique it. Therefore, there was a majority consensus to these two questions between the workshops.

## With their experience level in mind, what do participants hope to gain from this workshop?

Many stakeholders emphasized that they wanted to get increased knowledge and education from the workshop. Despite the participants highlighting a high degree of experience in their earlier responses, their answers to this question indicate how broad and diverse a field of study ecosystem services is.

Moreover, participants wished to know how ecosystem services could be applied to various fields (such as maritime spatial planning (MSP)) as well as how it operates in a marine space and can be tied to MPAs. Stress was also placed on the capacity for cooperation and knowledge exchange within these workshops between stakeholder groups.

*Table 4: In-person results on what participants hope to gain from the ecosystem services workshops (n=15).*

| Poll Question | Results |
|---|---|
| With your experience level in mind, what do you hope to gain from this workshop? (In as few words as possible.) | How to categorize and prioritize services |
| | How to enable it |
| | Understand what are the services outside the terrestrial environment |
| | New potential techniques and ideas on how to strengthen and improve ecosystem services |
| | To see how the concept is applied in MPA design |
| | Better ways how to make ES understandable to those who do not think it's important. |
| | What ES are exactly, insight |
| | Cooperation |
| | Learn more, cooperation |
| | Deepen my knowledge |
| | Wider pallet of ES agreed/known |
| | Cooperations and new insights |
| | Meet other stakeholders |
| | More knowledge and ideas |
| | New information and insights |
| | **Total (n=15)** |

*Table 5: Online results on what participants hope to gain from the ecosystem services workshops (n=16).*

| Poll Question | Results |
|---|---|
| With your experience level in mind, what do you hope to gain from this workshop? (In as few words as possible) | yes knowledge transfer! :) |
| | concept and how to apply it to MSP |
| | To screen the level of knowledge within PROTECT BALTIC and if my contribution might be needed |
| | stakeholders, methodology |
| | I am interested in ES in the Baltic Sea. |
| | better understanding of different stakeholder perspectives and what are the challenges to overcome barriers |
| | Perceptions of stakeholders |
| | knew insights |
| | To understand, how my sector can contribute to the ecosystems, biodiversity and marine ecosystem overall |
| | Understand what HELCOM's stand on ecosystem services is |
| | knowledge transfer with others |
| | Learn more about the baltic Sea |
| | Applicability of ES framework on MPAs |
| | Knowledge on how to apply this information to the project I'm working with! |
| | new insights |
| | Stakeholder views on what ecosystem services are important |
| | **Total (n=16)** |

## What do participants think of when they hear the term 'ecosystem services'?

To move from the needs of the participants, this question sought to get a sense of how the participants understood ecosystem services. In the word clouds, there is some sense of a distinction between the ecological systems underpinning human wellbeing, and the values which human systems place upon the ecosystem.

However, the importance of these socio-ecological systems was emphasized. Moreover, complexity and the difficulty of valuation was highlighted, as well as desires for knowledge on how to apply the concept to sectorial needs.

*"socio-economic" vs. ES*

Artificial urban park
Positivity for our natural environment
Clean environment
Valuation is difficult
Its my job 😉
Decomposition
recreation

Benthic habitat **Complexity**

Nutrient cycle food Vital for us
Biodiversity support
Climate stabilization Too much focus on quantitative value
Difficult to explain to private sector

*Figure 9a: In-person word cloud results on what participants think of when they hear the term 'ecosystem services' (n=13).*

ecosystem contributions

naturebenefits for humans

monetary nk

Life support societal values economy

social-ecological systems

Human impact interdependency

foundational for survival

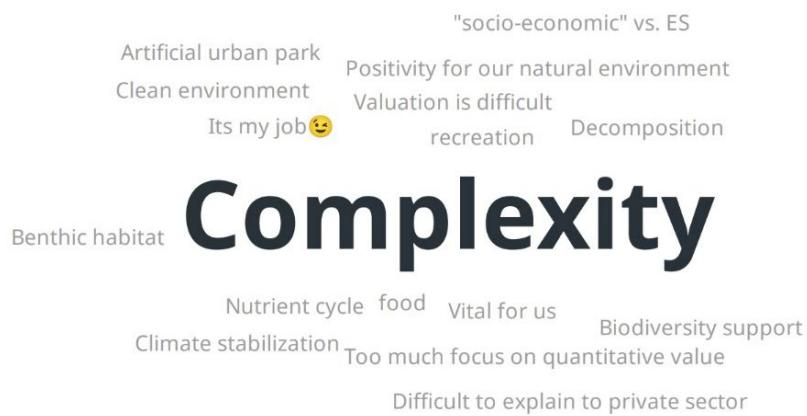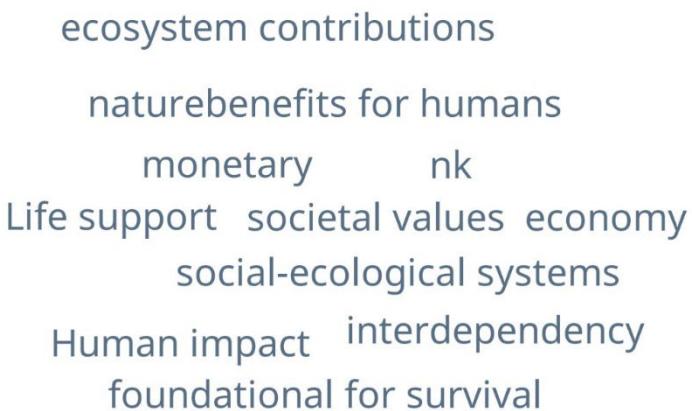*Figure 9b: Online word cloud results on what participants think of when they hear the term 'ecosystem services' (n=15).*

From the polling, there was a relative amount of consensus on the knowledge and perspectives on ecosystem services between participants. In moving from the polling to the focus group discussions, the designed method was intended to build from the polled questions.

## Focus groups

The focus groups were presented with six core questions to discuss. Some of these were intended to be reflected on individually, whereas others required collaborative work within the groups.

*Table 6: List of questions for focus groups.*

| Question order | Question | Individual or group |
|---|---|---|
| 1. | Who are you? Identify at what level your sector operates on the chart | Individual |
| 2. | With the concept ecosystem services, it is purposefully hard to isolate any one aspect from the whole ecosystem. But, from your perspective, are there any ecosystem services that your sector is reliant/most interested in? **(individual voting)** | Individual |
| 3a. | In your group, are there any similarities/differences between your votes in question 2? **(group voting)** | Group |
| 3b. | Now, based on your individual votes, select the top three services of your group collectively! | Group |
| 4. | What is the value (importance) of these services to your sector? | Group |
| 5. | On this scale, where would you map the value of this benefit in relation to economic and sociocultural wellbeing values? (Answer in with your colour). | Group |
| 6. | Do you feel like these services are considered enough (by researchers, politicians, civil society, etc.)? If not, elaborate on who should consider the service more (Discuss in your groups). | Group |

## Who are the participants? At what level do their sectors operate?

The answers to these questions were translated into numerical values based on the x- and y-axis presented in each figure. These values are made up to project the answers from this question into a plot figure. They highlight the need for greater focus on stakeholder engagement, e.g. representation from different governance levels and sectors.

For the onsite workshop, environmental sectors were overrepresented when compared to economic and socio-cultural sectors/civil society.
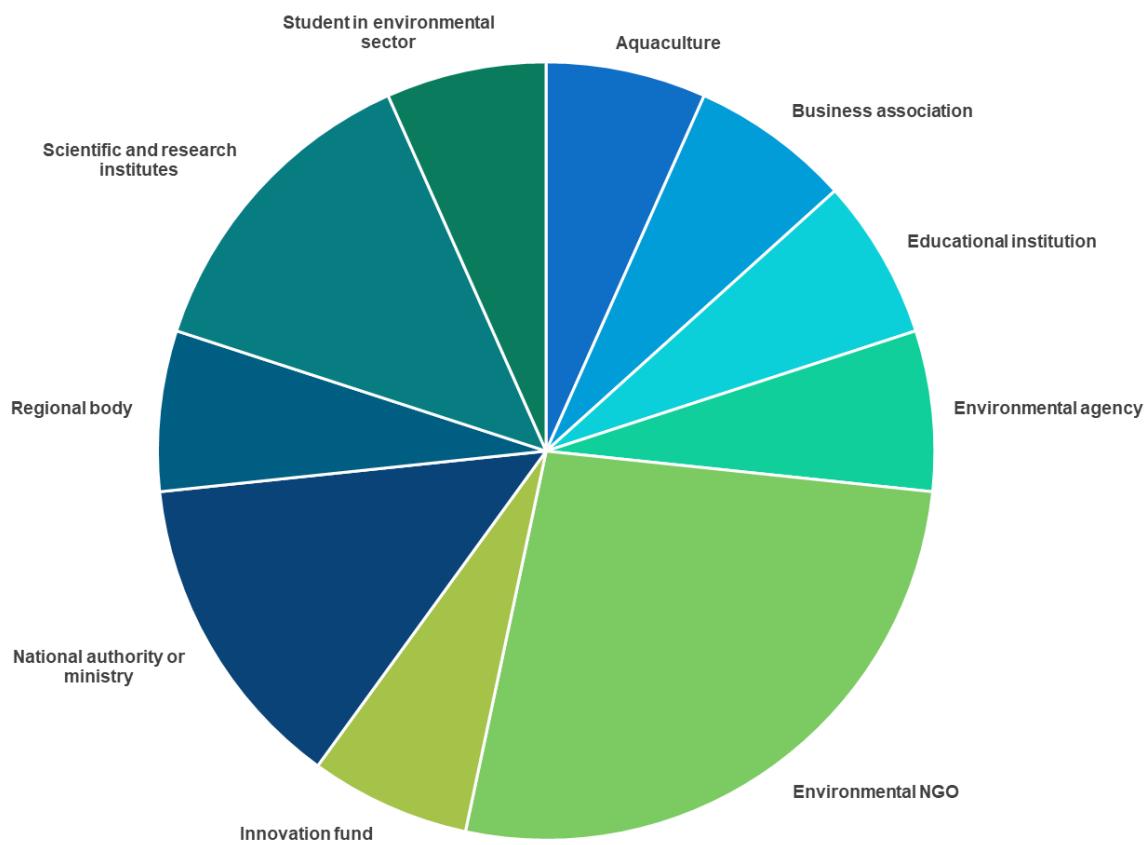
*Figure 10: In-person - participants according to stakeholder group (n=15).*

From Figure 10, the representation of stakeholders within this workshop was somewhat limited. Most participants mapped their sector within the transnational and national levels. With the regional and local levels less well represented. This is important to visualise as it likely influences the choice of ecosystem services in questions 2 and 3b. Additionally, there was slightly more diversity within the stakeholders online.

Of these sectors, environmental NGOs were the most highly represented within the in-person workshop. With scientific and research institutes, regional bodies and national authorities following closely.
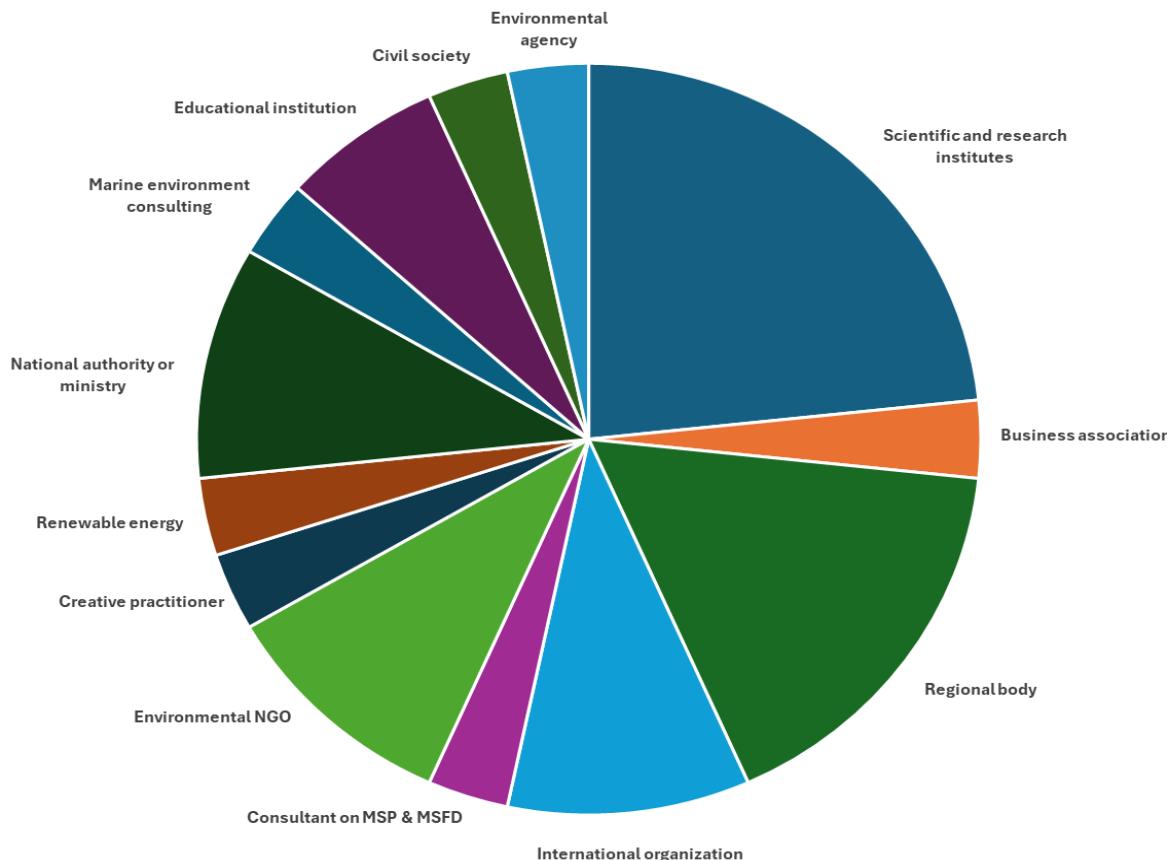
*Figure 11: Online - participants according to stakeholder group (n=30).*

Online, scientific and research institutes, regional bodies and national authorities were also represented highly (see Figure 11). However, there was a slightly lower presence of NGOs and a greater presence of international organisations. Most clearly, there was a lack of 'local' level representatives. This spread of higher-level representation likely impacted the results of the following questions.
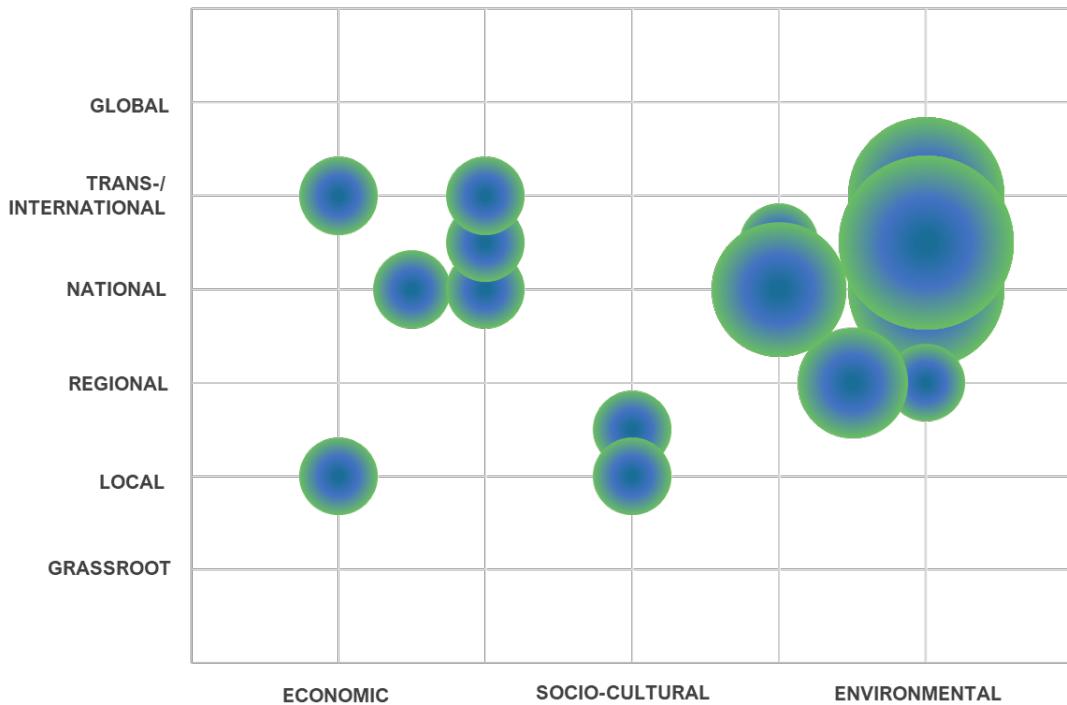
*Figure 12. This figure is based on the layout and answers of the in-person and online participants in terms of how they place their sector in respect to the governance level they are active in. This is shown in the scale on the vertical axis, ranging from grassroots to global level. The horizontal axis depicts roughly the type of work that is done by the institutions that participants represent. This division is based on the workshop facilitator's appraisal based on information provided by the participants when signing up for the workshop. The sizes represent the number of participants placed on each scale, where the smallest bubbles represent one (1) and the largest represent five (5) participants.*

With the concept of ecosystem services, it is purposefully hard to isolate any one aspect from the whole ecosystem. But, from your perspective, are there any ecosystem services that your sector is reliant/most interested in? (Individual voting)

From the individual voting, both the in-person and online participants voted highly for population maintenance[1] (regulation and maintenance ecosystem service). It was the service which received the most votes.

Additionally, science and knowledge[2] (cultural ecosystem service) also received similar votes between the workshops.

There was a spread of votes across the board for both workshops. One clear thematic similarity is in the condensed value of cultural services in the lower part of the list. Low votes were logged for spiritual and religious, symbolic meaning, entertainment or

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[1] From CICES Regulation and Maintenance (Biotic) Group, 'Lifecycle maintenance, habitat and gene pool protection' (CICES, V5.2: 2023).
[2] From CICES Cultural (Biotic) Class Services, 'Elements of living systems that enable scientific investigation or the creation of traditional ecological knowledge' (CICES, V5.2: 2023).

representation and aesthetic experiences[3]. Whereas the remaining four cultural services received a higher density of votes. Provisioning services were valued broadly across all categories between the two workshops. Whereas in the regulation and maintenance services, climate regulation, population maintenance and reduction and mediation[4] scored highly.

This is an interesting development, as some of these services can be classified as 'supporting services'[5] according to the Millennium Assessment (MA, 2005). One potential reason for this outcome may be due to the difficulty that many found in selecting only three services, and these 'supporting services' often directly influence the proper functioning of many other services. These service types have been introduced into the other categories within CICES and are often overlooked services within ecosystem service evaluation.



*Figure 13: In-person - stakeholder votes for question: 'With the concept ecosystem services, it is purposefully hard to isolate any one aspect from the whole ecosystem. But, from your perspective, are there any ecosystem services that your sector is reliant/most interested in?' (n=15, n/a=3 votes).*

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[3] From CICES Cultural (Biotic) Class Services. 1. 'Elements of living systems that have spiritual or religious meaning'; 2. 'Elements of living systems that have symbolic meaning, capture the distinctiveness of settings or their sense of place.'; 'Elements of living systems used for entertainment or representation outside the setting concerned', and 'elements of living systems that enable aesthetic experiences' (CICES, V5.2: 2023).

[4] From CICES Regulation and Maintenance (Biotic) Group, 'Reduction of nutrient loads and mediation of wastes or toxic substances of anthropogenic origin by living processes' (CICES, V5.2: 2023).

[5] Supporting services: 'services necessary for the production of other ecosystem services' (MA, 2005: 57) Examples include: nutrient cycling, primary production and soil formation.
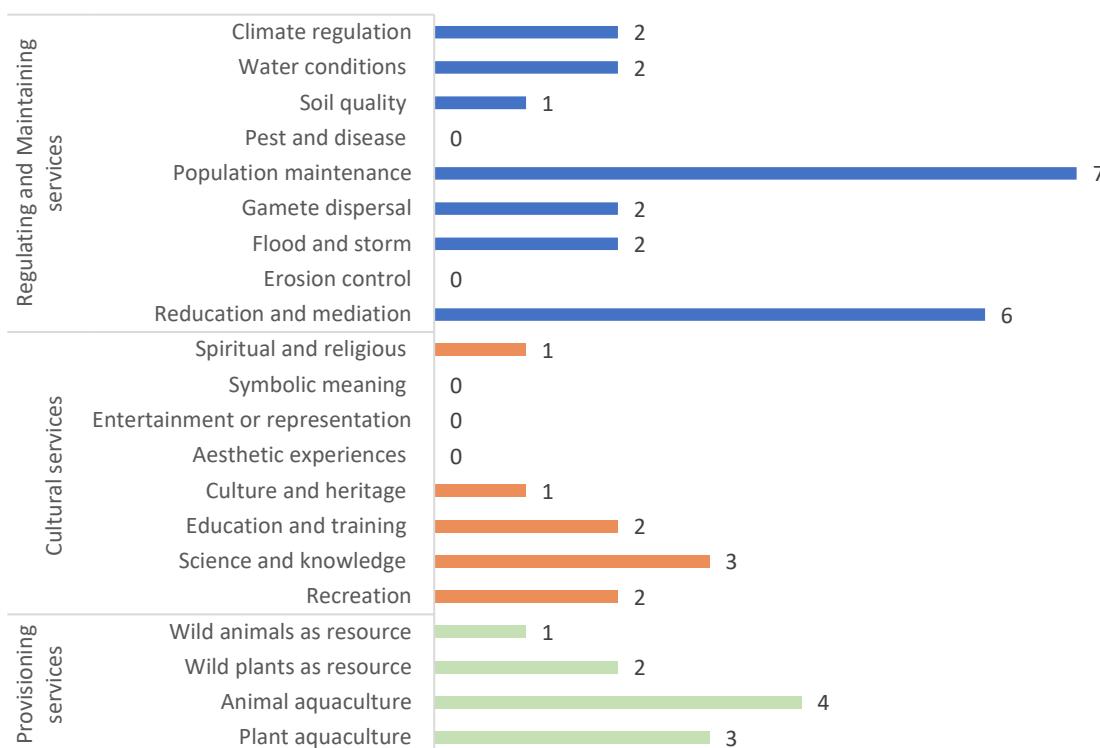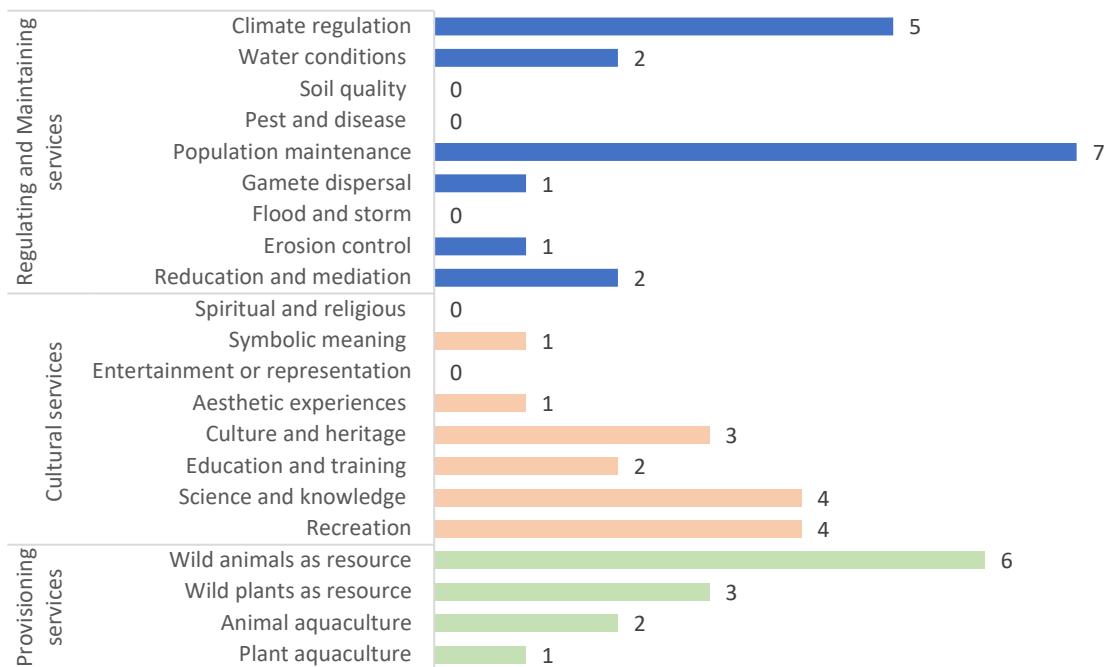
*Figure 14: Online - stakeholder votes for question: 'With the concept ecosystem services, it is purposefully hard to isolate any one aspect from the whole ecosystem. But, from your perspective, are there any ecosystem services that your sector is reliant/most interested in?' (n=15, n/a=8 votes[6]).*

## In your group, are there any similarities or differences between your individual votes in the previous question?

This question was created to present a space where stakeholders could discuss and identify where potential consensus and disagreement occur within the groups.

Each group noted how all services are interlinked and it is therefore hard to separate them. One group drew a link between habitat protection and the benefit to mental health and spiritual interactions with the environment.

Moreover, the perspectives of the group discussions were often directed to broader societies rather than individual communities or localities. This, likely also speaks to the level and perspective of the stakeholders and representation of NGO actors within these groups.

One key difference was noted between the interest of business in provisioning services and the participants representing the cultural sector who were more vested in broader cultural ecosystem services. Such cultural services were noted as 'realistic' benefits by one participant, likely reflecting that they are those most used by a general population.

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[6] For the online focus groups, some individuals voted more than three times – in these cases, the first three votes were counted, and the others were discounted.

Overall, though, for the onsite workshop, three out of the four groups noted that they had no differences i.e. they only reached consensus between the votes.

## Now, based on your individual votes, select the top three services of your group collectively

Participants were asked to vote collectively in their groups for their top three services. Unsurprisingly, for the onsite groups, population maintenance as well as reduction and mediation were the highest scoring services. Similarly, as in the previous question, the latter cultural services (education and training[7], science and knowledge and recreation) were voted for as were two provisioning services relating to animal biomass[8].
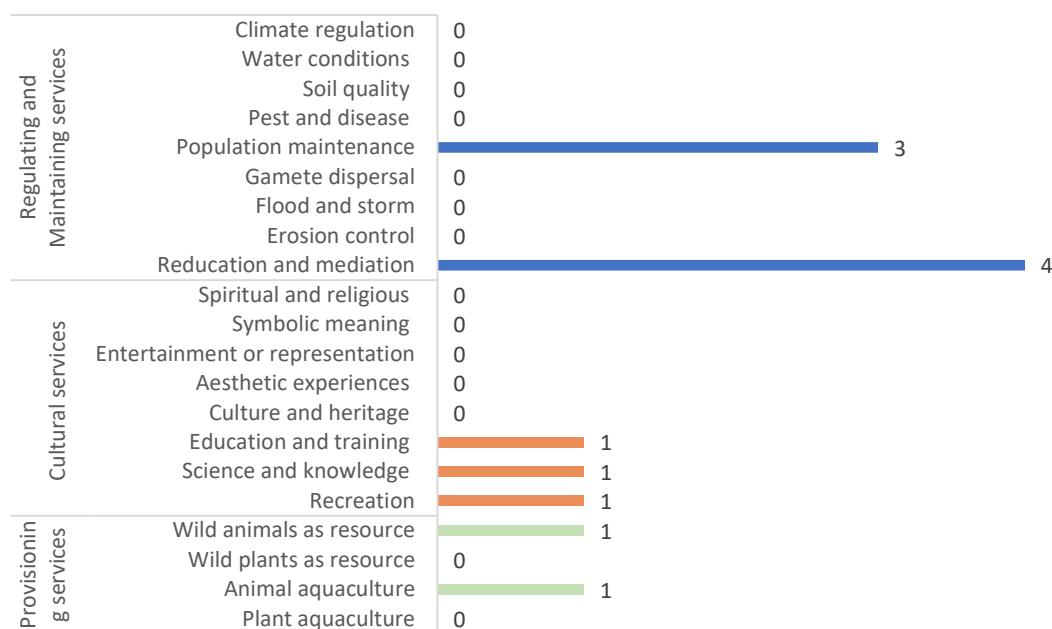


*Figure 15: Onsite - stakeholder group votes for question: 'Now, based on your individual votes, select the top three services of your group collectively!' (Group votes – four groups).*

For the online workshop, due to technical difficulties with the small group rooms, a collective decision on the top three services was made. These were climate regulation (regulation and maintenance; recreation (cultural service) and culture and heritage (cultural service). It should be noted that this is not representative of the group's individual votes, as it is for the onsite workshop.

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[7] From CICES Cultural (Biotic) Class Services: 'Elements of living systems that enable education and training' (CICES, V5.2: 2023).

[8] From CICES Provisioning (Biotic) Group: 'Reared aquatic animals for nutrition, materials or energy'; Wild animals (terrestrial and aquatic) for nutrition, materials or energy' (CICES, V5.2: 2023).

*Table 7: The three services selected for online discussion.*

| Service type | Three services selected for online discussion (Q3b) | CICES V5.2 |
|---|---|---|
| **Regulation and maintenance** | **Climate regulation** | **Regulation and Maintenance Service Group: 'Atmospheric composition and conditions'** |
| **Cultural** | **Recreation** | **Cultural Service Classes: 'Elements of living systems that enable activities promoting health, recuperation or enjoyment through active or immersive interactions' + 'passive or observational interactions'.** |
| **Cultural** | **Culture or Heritage** | **Cultural Service Class: 'Elements of living systems that are resonant in terms of culture or heritage'** |

## What is the value (importance) of these services to your sector?

Listed in Tables 8 and 9 are the two most collectively voted services of the in-person workshop: reduction and mediation and population maintenance as well as elaborations of their value to the group members.

Only two services with the highest number of votes are discussed here because the other ecosystem services were tied (see Figure 15). Once again, many referred to the 'supporting' function of these two ecosystem services compared to other services as a primary decision for their selection.

*Table 8: In-person sectorial responses to the 'value' of 2nd highest voted service.*

| Service | Votes (3b - group) | Why is it valuable? |
|---|---|---|
| Population maintenance | 3 | Nature inclusive design. |
| | | Natural 'cleaning' processes crucial so that habitats/species can thrive and gives chance for extraction/gains/food. |
| | | This is the foundation for a healthy Baltic Sea. Nursery populations support our NGO strategy and we have expertise in this. |
| | | Basis for a functioning ecosystem and a healthy functioning Baltic Sea (as we know it) |
| | | Basis to maintain the biodiversity and ecosystem |
| | | This supports the ability of the sea to provision supplies for business supply chains. |
| | | For reviving the Baltic Sea, we need to have healthy habitats that support the whole ecosystem in the sea. |
| | | Protecting the food web of the Baltic Sea is the basis for Baltic Sea enhancement. Also working to make it possible to restore natural lifecycles for migratory fish species in the river Kymi. |
| | | Research gives knowledge about whole ecosystem functioning and further understanding of Baltic Sea importance in our region |

*Table 9: In-person: sectorial responses to the 'value' of 1st highest voted service.*

| Service | Votes (3b - groups) | Why is it valuable? |
|---|---|---|
| Reduction and mediation | 4 | Business opportunity |
| | | Engages farmers to dig pools; maintain general biodiversity |
| | | It's one of the most important services of the Baltic Sea that serves ecosystems beyond the Baltic Sea |
| | | Our aim is to maintain a healthy Baltic Sea. Nutrient reduction is our main activity - very important |
| | | Eutrophication is the largest threat to the Baltic Sea ecosystem. Healthy coastal habitats would provide also climate benefits (blue carbon sinks). Anoxic sea beds twin into nutrient sources and sources of methane emissions. |
| | | Eutrophication is a key driver of the Baltic that needs to be addressed. |
| | | The biggest threat/most acute problem is nutrient run-off and it's expected to intensify as climate change advances. Water Framework Directive! |
| | | Research helps to understand sources of nutrients and how these affect the Baltic Sea environment. |

In the online session, the selected services to be discussed were: climate regulation, recreation, and culture and heritage. The results of the discussion in relation to the value of the services are presented in Tables 10, 11 and 12.

Here, it is not possible to see links between group votes from question 3b and the discussion in question 4. However, through the three selected services which were discussed, several interesting values were mentioned, including the importance of services like recreation for demonstrable links between societal wellbeing and ecosystem component function.

Additionally, the importance of cultural services to connect and established relation value between society and ecological wellbeing was addressed.

*Table 10: Online: sectorial responses to the 'value' of 1st selected service.*

| Service | Why is it valuable? |
|---|---|
| Climate regulation | Renewable energy is the way to reduce our impact on climate. However, it should be developed in a way where nature and climate goals are both achieved |
| | Governance needs to look into the future, and that means taking into reconsideration climate adaption |
| | All of them are valuable for my sector |
| | Understanding supply (where and how) will help make climate adaptation / carbon reduction measures effective |

*Table 11: Online sectorial responses to the 'value' of 2ⁿᵈ selected service.*

| Service | Why is it valuable? |
|---|---|
| Recreation | Governance, regional and national planning has recreation as one sector which means that it needs to be considered in plans |
| | Broad group of beneficiaries |
| | Increasing demand, particularly in COVID times |
| | Demonstrate the importance of ecosystem functions, components to society and underpin MPAs |

*Table 12: Online: sectorial value of 3ʳᵈ selected service.*

| Service | Why is it valuable? |
|---|---|
| Culture and heritage | Cultural and conservation sectors strongly opposing each other. they need to work together, maybe by valuing the same ES |
| | Important for local people to see that culture has a value |
| | Culture is a good way to connect |
| | Demonstrate the importance of ecosystem functions, components to society and underpin MPAs |

As a last point, it is important to note that the groups did not disagree strongly when discussing value in this question. This is likely due to the similar backgrounds of many of the represented stakeholders.

On this scale, where would you map the value of this benefit in relation to economic and sociocultural wellbeing values? (Answer with your colour).
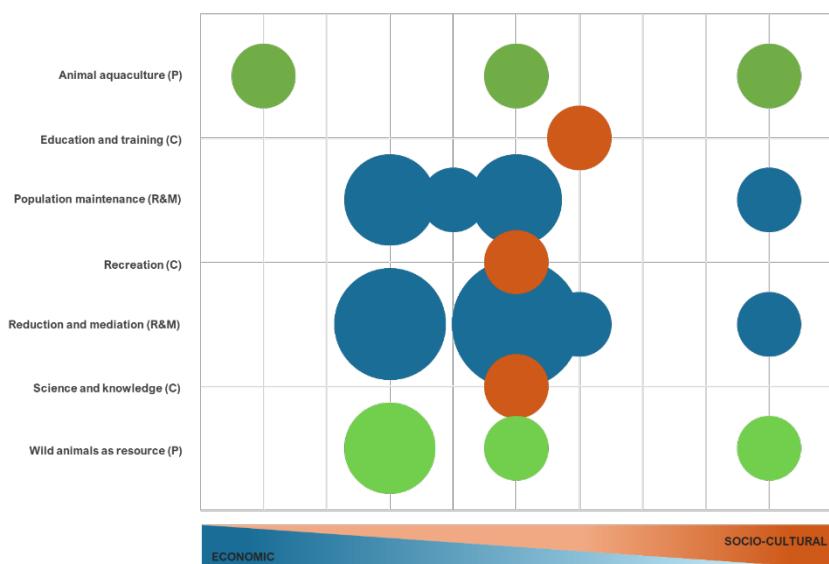


*Figure 16: In person where they placed the selected ecosystem service. Blue = regulation and maintenance; green = provisioning; red = cultural services. The darker the shade, the more votes that were received.*
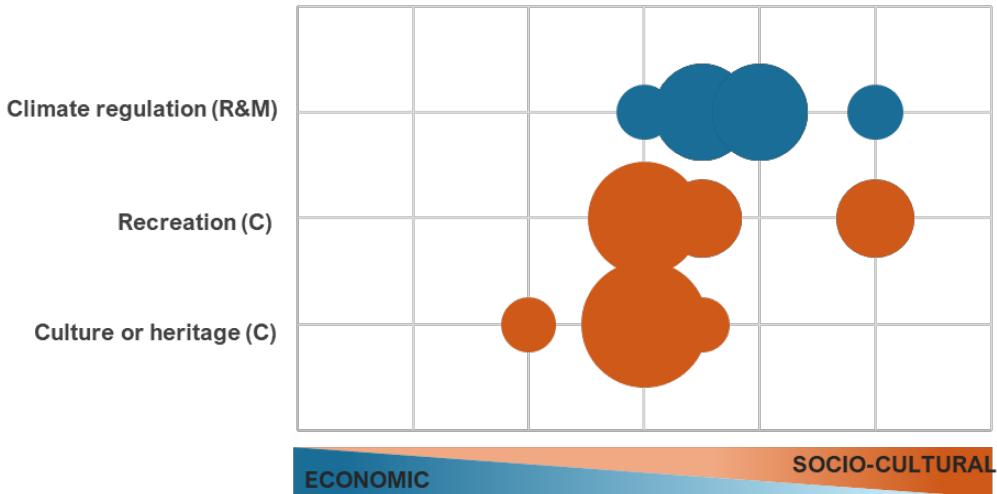
*Figure 17: Online, placement of the ecosystem service according to value in relation to well-being values in relation to economic and socio-cultural value. Blue = regulation and maintenance; Red = cultural services.*

Even though the two 'scales' are juxtaposed, they are not seen as either or.

Additionally, nature's intrinsic value is omitted from the graph, but present in the interpretation, which has also been demonstrated by the participants as they have placed most ecosystem services in the middle of the graph.

## Do you feel like these services are considered enough (by researchers, politicians, civil society, etc.)?

### In-person:

With this question, an understanding was sought on whether participants feel that an ecosystem service is appreciated and considered enough in society.

From the onsite group, an overall trend was noted in the responses that researchers most often understand and consider ecosystem services well, but that there is a disconnect between this understanding and how it is translated into policy and taken into account by politicians.

Moreover, with some of the regulating and maintenance services, it was noted that it is often difficult to understand how these regional ecosystem service supplies and pressures are linked to human action for an individual person (for example, nursery habitats were mentioned as a difficult ecosystem service to understand, and eutrophication as a key pressure). With that, once more, the importance of education through ecosystem services was emphasized.

While researchers were emphasized as key catalysts in bridging the gap for policy and governance-related decisions (in providing information and data on ecosystem services within the Baltic) it was also noted, in relation to recreation, that there needs to be equity in the designation of marine protected areas and other protective measures, as situations can

occur when some users are marginalized from accessing and enjoying natural spaces, which may have overall harmful effects for the perception of protection.

Another group noted that recreation is often a keyway in which people can feel a connection to nature and come to support protective legalisation. However, recreational activities can sometimes compromise protection efforts. As such, there is a tricky balance to be made here which will likely be very contextual, and which involves multiple different service types.

## Online:

Similar points were raised in the online discussion. Notably, with the climate regulation, it was noted that the capital or economic focus of many governments implies a lack of understanding on how badly humanity is dependent on a "healthy" climate and stable ecosystems. This implies both a lack of knowledge as well as a conflict of interest in the policy realm.

Civil societies were discussed as lacking in knowledge of how these services function, therefore meaning that such services are not adequately valued.

In a somewhat opposite line of thought, it was noted in relation to the ecosystem services of culture and heritage that they are difficult to quantify and or value by researchers, and therefore, they have less impact despite being relatively important for many people. This is an interesting point as it refers to a 'gap' in ecosystem service studies, which relates to services that are very difficult to discuss on a regional scale but which, however, are very impactful and relevant for civil society. As such, researchers should direct more attention to developing methods and means of evaluation for such services.

## Summary of overall input and impressions from the event:

From the onsite event, WP4 received excellent feedback for the design and approach of the workshop, with 14/15 participants voting 4-5/5 in the final Slido poll.

Onsite, the participants seemed engaged, and discussion continued for the full session. Online, things became more complicated with the technical difficulties. Yet, positive feedback was still received from the stakeholders who continued to the end of the workshop.

In the final wrap up session of workshops, some comments were given which can be used to help shape future discussions. These are:

*1. Horizontal understanding of ecosystem services*

It was noted that ecosystem services are easier to comprehend in coastal areas but much harder to comprehend in the open ocean/sea. Therefore, work should be done to help stakeholders understand the perceived linkages realised at the coast to the open sea.

*2. Ecosystem services role in MPA designation*

It was decided in the planning phase that two hours was too little time for a scenario analysis which would discuss MPA designation based on ecosystem service provision. However, many partners wished to understand how ecosystem services could play a role in MPA and OECM planning. An example was given that MPAs could be understood differently if an ecosystem service framework was applied to analyse the 'true' ecological value of a specific area and how it directly impacts wellbeing. This could be a topic of future workshops.

*3. Inter-generational aspect of MPAs and potential OECM areas*

Through the discussion of cultural ecosystem services, MPA/OECM designation was discussed in relation to how human interactions with nature could be encouraged through less impactful activities. This could allow for a more 'nature positive" experience/approach within MPA/OECM areas, as opposed to designating only restricted areas or no-go/no-take areas.

## Key findings:

## Stress given to the importance of ecosystem function and integrity

Overall, the small groups voted regulation and maintenance services more highly than provisioning or cultural ecosystem services. Additionally, many of the regulation and management services selected were what are often referred to as supporting services in the MA assessment (2005). These services can be broadly understood as those which allow for the proper functioning of other services and the general ecosystem.

It was noted that this perspective was likely due to the knowledge base of those participants attending, who tended to have a high amount of knowledge on ecosystem services. It was noted in discussions on the similarities and differences between their answers that one group highlighted how their selection of these supporting services links to their common view of the 'integrity of ecosystems'.

Additionally, it was noted in the observation that there was a tendency for the small groups to think of ecosystem services from a global or Baltic Sea perspective rather than from an 'individual' or local view. In that way, overarching services took priority as they were understood to have a higher potential for providing 'benefits' to people.

Additionally, the link between ecological function and human health (mental and physical) was also discussed in some depth, with the potential absence of proper functioning resulting negatively on human wellbeing from a mental and spiritual point of view, in particular.

This is an interesting outcome, as it draws a link between services – in this case, regulation and maintenance services are tied with cultural ones regarding the spirituality and existence value. Online, some participants questioned the sense of categorising ecosystem services in

the first place with such frameworks like CICES and MA, as these interlinkages between services can be lost from an ecological and societal view.

## Cultural ecosystem services - education linked to science and traditional ecological knowledge (TEK)

The cultural ecosystem service of education as well as science and traditional ecological knowledge was discussed in depth within many of the groups. The two were often linked with multiple groups noting how essential it is to have a secure knowledge base before you can properly educate people on the topic.

Practical realities on local levels from the resources available in schools were discussed, as well as the difficulty to communicate scientific ecosystem service outcomes to broad audiences due to complex language and restraints within research communities.

In these discussions, both the cultural services of education as well as science and TEK were seen to be interdependent and closely related. This is an interesting outcome, and again, asks a question of how to explore linkages between the types of services within a cascade rather than view their cascades individually.

## Are you considering that one country delivers ecosystem services to another? Ecosystem services, politics, and governance

Linked to these prior two aspects is the political discussion of ecosystem services. When discussing different values, the political implications become apparent. In many of the small groups and discussions, it was noted that the value of these services can be perceived on multiple scales – i.e. the individual person may value a particular service, or even a community, but that service may not be reprehensively valuable for a nation or region.

Some of the onsite small groups pointed to the difficult place of politicians in representing the value of such services, as much of the scientific work of ecosystem service studies and valuation is used in decision-making.

In conflict situations, where one ecosystem service is valued over another, it may be that a local level appreciation is traded for the benefits of another set of larger serving services. However, it may be difficult for politicians who are locally elected to advocate for multiple services in cases of competing or conflicting interests.

Additionally, it was noted that this is a difficulty linked to the cultural services of education and science and knowledge, as both services – to be realised – can be largely dependent on funding from various levels of government. Linked to a discussion of why these services may 'not' be valuable are the realities of 'short-term' cyclical governments which can easily bump these issues from their agenda list.

It was noted in the discussions that there can be a clash between different sectorial ways of thinking – I think about me, you think about you without 'big picture thinking'.

A question was posed on whether this big picture thinking is expected from decision-makers, or whether there is an expectation of support through local political representation. As such, from the workshop discussions, a disparity between the knowledge creation and political influence of ecosystem services became apparent, and this was voiced particularly by the environmental NGOs and international organisations.

## Legal frameworks for planning marine spaces



*Image 14: Participants during the in-person legal frameworks workshop share experiences of how legal barriers influence the development of multi-sector MPAs.*

### Overview

The in-person workshop on legal frameworks was facilitated by *Henrik Ringbom* (WP7 lead for Legal frameworks) and *Niels Krabbe*, both from Åbo Akademi University. The online session was led by *Estefania Cortez* and *Andrea Cervantes*, both from Coalition Clean Baltic.

States have undertaken to effectively protect and manage 30% of the world's oceans by 2030. According to the Global Biodiversity Framework, this should be achieved by adopting ecologically representative, well-connected, and equitably governed systems of protected areas and OECMs. Similar quantitative protection goals have also been established at EU level (the EU Biodiversity Strategy) and for the Baltic Sea (the 2021 Baltic Sea Action Plan (BSAP)).

PROTECT BALTIC aims to, among other things, improve the understanding of, and propose solutions to, barriers in the legislative framework for marine protection.

As the academic and policy discussion regarding the effectiveness of legal frameworks in favour of marine protected areas (MPAs) continues, many elements have been considered to complicate the development of MPAs. From different human uses regulated in isolation to the lack of common language, terminology and understanding of areal protection, there

are many legal obstacles to overcome on the way to achieving a coherent and significant network of MPAs in the Baltic region.

As a consequence, the objective of this workshop was to share experiences of how legal barriers, including but not limited to those earlier mentioned, influence the development of MPAs with activities to manage from several sectors (multi-sector MPAs). The workshop output then serves as a starting point for research in the project with the objective of developing proposals for solutions.

## Methodology

Both formats of the workshop sessions (online and in-person) shared a similar structure, with three major discussions/topics, each aiming to acknowledge and retrieve what the participants regarded as the main (1) legal opportunities and (2) legal barriers within the process of implementing effective MPAs, to then explore the possible (3) legal solutions to the issues raised.

For the online workshop, three different digital tools were used: a Miro board, PowerPoint and Slido. The structure identified six main segments: Stakeholder introductions, Knowledge transfer (10min presentation), Discussion 1 (20min), Discussion 2 (20min), Discussion 3 (20min), and Conclusions/next steps.

As the main challenge within an online event lies within the level of engagement, the workshop aimed to make use of breakout groups with the help of PowerPoint (previously prepared slides) to support the first two discussions, as well as Slido to retrieve quick responses regarding the level of legal knowledge as well as perceptions of legal constraints within the conversation on MPAs.



*Figure 18: Slido poll results from the online session of the legal frameworks workshop.*

Furthermore, the workshop made use of the Miro board in two specific moments: during the introduction of the participants, as well as for the third discussion related to possible solutions, including the voluntary knowledge-shared of any successful stories/cases that the participants considered relevant for this workshop.

The main difficulty faced was the perception of time, which led to a rather short and fast conclusion of the workshop. This impasse was overcome by a follow-up email to all attendees the day after the workshop.
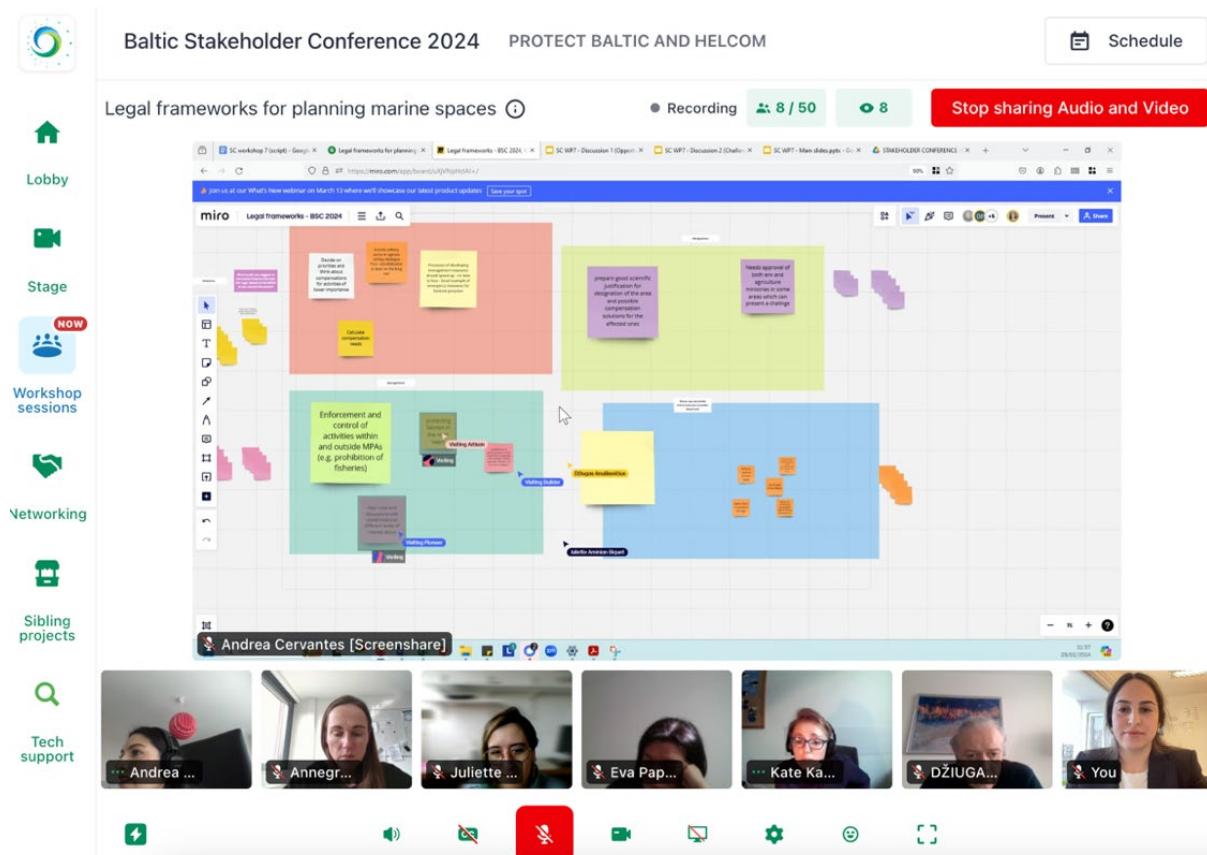


*Image 15: Using Miro to work on solutions in Discussion 3 of the online session of the legal frameworks workshop.*

In view of the limited number of participants, and to avoid interference with the online session, it was decided not to use any online tools for the in-person session. Group work thus consisted of discussions in two groups, led by a moderator, and a mutual exchange of views between the groups, convening in the same room. The structure of the discussion was the same as in the online session.

## What are the key legal obstacles involved within the designation, implementation and monitoring of MPAs? ("Are the different phases of planning, designation, and management of MPAs posing different challenges?")

This question reflects on topic 2, which explores the challenges within the current legal frameworks relevant to the MPA topic. This question aims to unveil the most harmful obstacles from the stakeholders' point of view. The discussion generated a variety of input

regarding the different stages of MPA establishment, as well as a deeper conversation within several conflict-of-interest scenarios.

The input received from the online session focused on the different perspectives and needs from key ministries and institutions, where both economic and normative issues usually collide. Furthermore, it was established that the mere presence of other sectors/activities overlapping with MPAs could provoke conflicts, mainly if those sectors had no intention of applying protection measures. The need for real enforcement for implementing those measures was highlighted by all participants.

The in-person discussions matched the online conversation, especially regarding the difficulty of compatibilization between economy and environmental protection, as well as the weak enforcement that could lead to so-called "paper MPA" situations. Furthermore, the idea of "silo-thinking" approaches at all levels of regulation, starting at global level and very much maintained at EU level, was emphasized as part of the legal challenges linked to MPAs.

A particular friction is the one between fisheries and marine environmental protection, which is particularly important at EU level (between the Common Fisheries Policy (CFP) and MPA bases found in instruments such as the Marine Strategy Framework Directive (MSFD) and the Habitats Directive). In certain countries, solutions relating to the ownership of waters add to the legal challenges in near-coastal areas.

Finally, it was also acknowledged that there was a lack of understanding of all the MPA benefits among various stakeholders, which increases the challenges of a collaborative MPA implementation.

## What should the role of the legal framework be to help overcome/resolve identified legal obstacles? ("In a world without legal, political, or economic barriers, what would be the basis for establishing MPA?")

This question derives from Topic 1 above which explores the opportunities that can be found within key regulations and legal approaches when discussing coherent and successful designation and implementation of MPAs and others.

The online participants brought many creative responses within this section, establishing ecosystem needs and priorities – especially including the concept of an ecosystem approach – as the starting point to value and determine MPAs. The need to better integrate ecological features and concepts into legal frameworks was recognized, alongside the need for better participation processes.

In addition, the participants stressed the importance of multiple levels of collaboration reflected in different forums, mentioning BaltFish (https://www.fishsec.org/baltic/baltfish) as one of these effective spaces. Significantly, the topic of "Strictly protected areas" was discussed, with different perspectives on how a case-by-case approach would be better suited than a general formula for all MPAs.

During the in-person session, the conversation targeted more procedural aspects that could be improved, such as a top-down approach when designating MPAs, as well as keeping scientific data as the foundation for decision-making processes regarding MPAs.

Biodiversity criteria were considered to be the most important selection criteria for identifying MPAs. The relevance of stakeholders was determined as a major asset and opportunity to improve enforcement, some even arguing that everyone should be able to propose MPAs. Yet, it was the role of the overarching legal frameworks – such as the MSFD and CFP – that remained the main focus of the discussions, emphasizing the need for policy integration across sectors.

## What other legal solutions should be explored to secure and implement a legally enforced network of MPAs in the Baltic Sea region?

This question assesses the potential solutions encountered within Topic 3 of the workshop and was separated into three phases/stages: Planning, Designation and Management of MPAs.

Through the Miro board, online participants were able to write their ideas in three separate boxes: Planning, Designation and Management. Early planning and determination of priorities were considered key, including all interested sectors (i.e. military), as well as compensation discussions that could speed up the development of MPAs.

Regarding designation, the scientific justification was again mentioned, introducing the need for approval or technical opinions from relevant ministries that could pose a future challenge. To improve management, the establishment of an advisory board of stakeholders – especially from critical sectors – was also an idea that could increase political and institutional trust.

The in-person session discussed the available portals and MPA management tools from a "whole-site approach", evaluating the idea of merging HELCOM/OSPAR frameworks with Natura 2000 regulations and the MSFD. In addition, participants suggested that there was a need to be adaptive when trying to reach protection goals, avoiding reaching legal targets without taking into consideration domestic circumstances.

Finally, education on marine protection is crucial, and so the participants argued that there should be a better way to implement MPA management if knowledge was shared where it can have a real impact.

## How do international or regional targets/policies support or hinder the accomplishment of marine protection goals, to ultimately improve the status of the Baltic Sea marine environment? ("Do you see anything that needs to be added to the currently established frameworks? If not, what legal rules constitute the main problem when addressing MPA issues?")

This question was deeply intertwined within all three main discussions due to the practical and concrete consequences of the international legal standards within the MPA agenda.

Within the online session, participants recognized the many new legal developments regarding environmental protection, such as the new Nature Restoration Law. However, they were all aware of how other legal frameworks that are being promoted, mainly related to renewable energy production, may pose a clear conflict of interest in the long-term goal of environment protection.

## Summary of overall input and impressions from the Legal frameworks workshop

Both the online and in-person sessions had a variety of actors/sectors represented, which provided a fruitful dynamic between the participants, contributing to a well-rounded conversation of legal and non-legal issues that helped shape the overview.

Many participants were highly involved in strategic sectors, such as fisheries and ships/cruises, providing different examples and perspectives mainly related to the conflict-of-interest discussion.

The triad of discussions provided a smooth transition from knowledge sharing towards a practical exercise for participants. In both sessions, the aim was to highlight the relevance of separating the work in the three phases previously mentioned, which prove to be an organized way to obtain input. Breakout groups were actively involved and emphasized different aspects of the issues, depending on the way the discussion got started and on the background of the participants.

Researchers in the sessions posed many relevant follow-up questions regarding the overall process and results of PROTECT BALTIC in the longer-term. Furthermore, the genuine interest in avoiding "paper MPAs" led the discussions beyond only legal obstacles, which would be relevant to take into consideration for the first deliverable under Work Package 7 (Task 7.1 An overview of existing international legal frameworks).

## Key findings:

## Sectoral compartmentalization in law, policy, and organization must be bridged

Throughout the workshops, the importance of "de-sectorializing" the process at all stages (planning, designation, and management of MPAs) was highlighted. A challenge with planning, which is less sectorialized than the other two, is that in some jurisdictions, the plans are only non-binding and do not commit decision-makers or permit authorities. The fragmentation of regulations and policies is not conducive to an effective legal approach on MPAs. Furthermore, the participants agreed that the need for protection (planning phase) should be based on the biodiversity/productivity of an area as a deciding factor, which is not always the case.

## Promote synergies between and integration of legal frameworks, ensuring effective enforcement measures and preventing conflicts of interest

The need for better communication between legal frameworks was constant in the workshops, which accounted for possible contradictions. On the one hand, the importance

of EU rules for the overall legal questions, provided a baseline for the establishment of MPAs; however, for several participants, the criteria within regional MPA networks – such as Natura 2000 – was not intended to be exclusive, which in contrast has now been manifested in concrete frictions between the CFP and the Habitat and MSFD regimes.

Some participants also referred to best practice cases, e.g. where fisheries restrictions have led to the return of species, also to the joy of interest groups that originally opposed the measure.

## Overcome reluctance to apply mediation and making trade-offs between interests

An aspect that was stressed by several participants was that open-ended dialogue appears to be the general strategy to address conflicts between different marine uses. While such interaction may be fruitful and promote pragmatic solutions in some cases, it must also be recognized that in some areas, certain activities are irreconcilable with marine protection objectives. In such cases, there must be a clear end-date to stakeholder discussion and policy makers should overcome the reluctance to prioritize among interests.

In this respect, concerns were also raised regarding the EU's application of a generic 'Overriding national interest' standard for certain activities (e.g. renewable energy), which is likely to negatively affect the case-by-case assessment of the suitability of the area in question for the purpose as well a general holistic approach to the usage of maritime spaces.



*Image 16: Estefania Cortez and Andrea Cervantes from Coalition Clean Baltic close the online session thanking attendees for the fruitful discussions.*

## MPA Portal



*Image 17: Kimmo Koivumäki from the HELCOM Secretariat kicks off the in-person workshop to identify the specific needs and requirements of users for a new and improved Baltic Sea MPA Portal.*

### Overview

The in-person workshop was led by *Kimmo Koivumäki* (WP2 lead for Data and WP8 lead for the MPA Portal from the HELCOM Secretariat. *Jannica Haldin*, PROTECT BALTIC Project Manager (and WP6 lead for Governance) facilitated the online session.

PROTECT BALTIC will re-work and improve the current HELCOM MPA database to form the basis for a new and improved comprehensive Baltic Sea MPA Portal. To facilitate this transition, these workshops were organized to provide a valuable platform for stakeholders to actively engage in the process and help scope potential use cases, user needs and functionality of both the MPA database and the Portal.

During the workshops, stakeholders were encouraged to provide constructive feedback on the current state of the MPA database. This feedback was crucial in identifying areas for improvement and understanding the specific needs and requirements of users. Additionally, participants were invited to share their initial ideas and suggestions for the development of the new portal. Importantly, participants were urged to think beyond technical constraints during the early stages of development for the portal. Instead, they were encouraged to envision an ideal world scenario and propose innovative ideas and functionalities for the portal without limitations.

One of the aims of the workshops was also to compile a list of individuals who would be keen to contribute to the development team throughout the process. These individuals would play a vital role in shaping the future of the MPA Portal, ensuring that it meets the diverse needs of stakeholders and effectively supports the objectives of PROTECT BALTIC.

## Methodology

At the outset of the development phase of the MPA Portal, there were several queries regarding the use of the current MPA database, alongside a pressing need to gather preliminary insights into the desired features of the new portal. To address this, an initial questionnaire was distributed to participants, two days before the conference, yielding a modest response of five replies.

Subsequently, the same questionnaire, augmented with options for user group selection and an indication if the respondent was an MPA manager, was circulated to all members of the PROTECT BALTIC consortium post-conference. This iteration garnered an additional 10 responses. All 15 responses, along with insights and discussions from the live workshops, are handled in this report.

Recognizing the significance of soliciting input from various user groups, the approach aimed to gather responses to a range of general questions rather than delving deeply into fewer topics. Through this method, the aim was to capture diverse perspectives and opinions while engaging stakeholders in discussions surrounding the subject matter. With a view to achieving this, in addition to asking participants to directly provide input using Miro and post-it notes, the discussions were recorded in the online session and notes were taken in the in-person workshop.

The questions posed during the workshops were structured as different tasks, intended to elicit initial feedback from participants regarding the most crucial functionalities required and their perspectives on the relevance of various aspects for the future portal.

A notable challenge encountered was that the participants involved did not cover all the foreseen end-user groups, with seven individuals participating. Despite modest starting points, the outcomes surpassed expectations, owing to the wealth of experience and expertise contributed by the engaged and knowledgeable participants.

## Which user groups might use the MPA Portal?

Participants were asked to identify potential user groups for the new MPA Portal and produced 30 distinct groups. These groups were then categorized into seven higher-level classifications, with the option to add an "Other" category (see Figure 19).

| | |
|---|---|
| ● Academia | 1 |
| ● Private sector | 0 |
| ● National authority | 1 |
| ● Research institute | 4 |
| ● Citizen | 0 |
| ● Non-governmental organization... | 0 |
| ● International organization | 2 |
| ● Other | 1 |
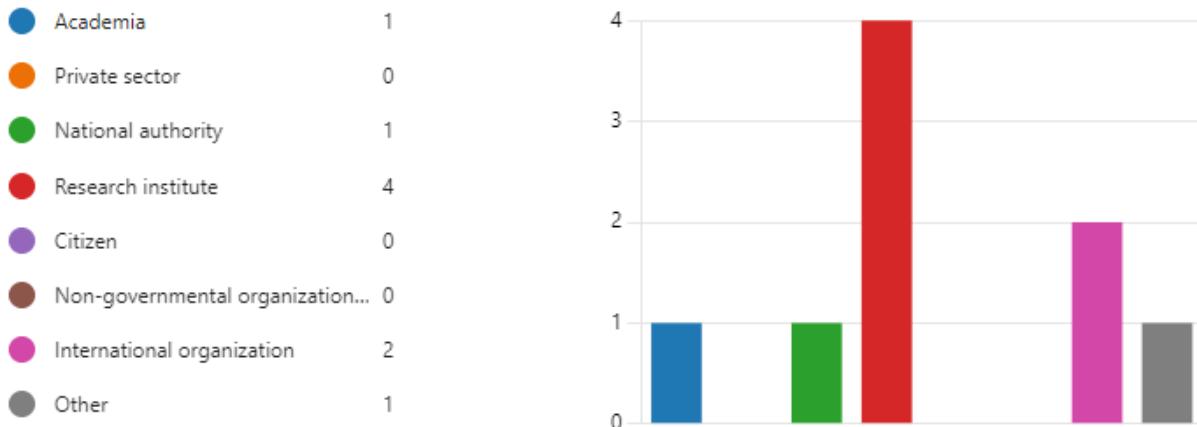
*Figure 19: Which user group did the online questionnaire respondents for the MPA Portal workshop consider they belonged to?*

The resulting classification system was subsequently employed in the latter part of an online questionnaire sent to PROTECT BALTIC consortium after the conference.

An analysis of both the workshop outcomes and questionnaire responses revealed the need to inquire separately whether respondents were MPA managers, as they constitute a focused group that may belong to multiple categories. For instance, maritime spatial planners (MSPs) were classified under "National authority," while categories such as "students," "researchers," "children at school," and individuals from the "education sector" and "higher education" were merged into the "Academia" group.

Recognizing that individuals might fit into multiple categories, respondents at the workshop and in the subsequent questionnaire, were advised to select the one they primarily identified with. Additionally, it was noted that if a similar questionnaire were administered to a broader audience, "Academia" might have been labelled as the "Education sector."

In the online workshop, web search engines were identified as a user group that needed consideration in the development of the MPA Portal, although they were not included in the subsequent questionnaire.

The largest user group identified was "Research institute," followed by "International organization." The sole response categorized as "Other" in an open-text field was classified as "Consultant."

Feedback from the private sector would also be crucial at this planning stage to ensure the MPA Portal meets their needs. Notably, there were no representatives from the "Private sector," "Non-governmental organization," or "Citizen" user groups. And only one of the respondents identified as an MPA manager.

## What are the main requirements for the MPA Portal?

The answers to this question were gathered from various sources, including responses to multiple questions posed to workshop participants and the results of online questionnaires.

A key concern raised was the importance of ensuring that the MPA Portal remains up-to-date and includes information from the latest MPA management plans. This necessitates careful planning during the design phase to determine who will be responsible for updating the MPA Portal and how this process will be implemented to ensure the timeliness of the data.

Another crucial point emphasized was that the new MPA Portal should strive to not increase the workload for its main users. Participants highlighted the importance of ensuring that the software does not become "one more step of reporting" at the regional level but rather facilitates the process of reporting MPA-related data by e.g. functioning as the main data repository from which reporting to other databases (e.g. EU or global) would be done.

Additionally, one of the most frequently mentioned requirements was the inclusion of a map feature with various functionalities. This need was expressed in all 15 responses received during the workshops and in the online questionnaire.

In addition to general information of the MPAs, the MPA Portal should also contain MPA management information (measures, pressures, activities, enforcement etc.) and have other relevant data available, such as biodiversity and species data. This was in line with the online questionnaire where the "MPAs", "Management plans" and "Species" tabs were indicated as the most visited sections of the current MPA database.

The automatization of statistical data and reports was mentioned on several occasions. This request goes hand-in-hand with data harmonization which was also brought up.

As a conclusion it was mentioned that the MPA Portal should be a "one-stop shop" for all MPA-related information at a regional level.

## Which style of user interface suits the MPA Portal best?

Within the workshops, a poll was organization displaying 12 screenshots of samples of portal front pages, each with a different look and feel. There was also space left for respondents to provide their own ideas. The top three screenshots (in Figure 20) got 85 % of the votes (35%, 29% and 21% respectively).

The most popular samples in the voting process prominently featured maps. The second most popular design solely focused on displaying MPA areas on the map, while two other designs included additional infographics such as various statistical charts.

In accordance with responses from other questions, the user interface (UI) of the MPA Portal should strike a balance between simplicity and versatility. This suggests an intuitive and uncluttered design, while also ensuring easy access to more detailed information when necessary.

In the online questionnaire, respondents emphasized the importance of low latency or speedy response to user actions, giving it an average score of 3.8 out of 5.

Colourfulness was highlighted as a desirable feature. The map should be interactive, serving as one of the primary tools for information representation along with graphs. The front page should provide a clear overview of the portal's contents.

Interestingly, mobile device usability was not considered a significant priority, as indicated in Figure 21. One explanation offered was the potential impracticality if the page allows for geoprocessing by users.



*Figure 20: Top three most voted MPA Portal front page styles.*

| | |
|---|---|
| Yes | 4 |
| No | 11 |



*Figure 21: Is it important to design the new MPA Portal to be usable with mobile devices?*

## Which functions and tasks are missing from the current MPA database?

The current MPA database lacks several key features, as highlighted in discussions:

1. **Map viewer and functionality**: a crucial missing component is a map viewer with diverse functionalities. It should display various statistics and indicate activities and pressures that may affect the MPA. Additionally, there's a need for statistical graphs derived from MPA data.

2. **Unified terminology**: a notable issue is the absence of unified terminology, reflecting challenges in data harmonization and vocabulary. Efforts have begun to address this through discussions at HELCOM, with plans underway for a vocabulary service.

3. **Ease of use**: the current database is criticized for its lack of user-friendliness and ease of use. This feedback underscores the importance of prioritizing user experience in the design and development phases of the software.

4. **Structured management plan summaries**: the existing summaries of management plans are deemed inadequate. While basic MPA data is structured, there's a need for PROTECT BALTIC to establish new data standards and ensure existing data is reviewed and updated.

5. **Data accessibility and sharing**: the current database falls short in making data widely accessible for reuse and sharing. There's a strong desire to enhance data availability and facilitate extensive sharing through the new portal.

Addressing these deficiencies is crucial for improving the functionality, usability, and accessibility of the MPA database, ultimately supporting better protection and management efforts.

## What map functionalities should the MPA Portal have?

The new MPA Portal should show HELCOM MPAs but also national and other international designations such as Natura 2000 MPAs and, eventually, OECMs.

Participants discussed the following desired map features and functionalities, listed in order of importance, with the most crucial ones at the top:

1. **Overlay options for layers**: users should have the ability to overlay different layers such as species distribution, pressures, activities, and subsets of the Baltic Sea. They should also be able to toggle these layers on and off according to their preferences.

2. **Zooming and search options**: the MPA Portal should allow users to zoom in and out of the map and provide search functionality for easy navigation.

3. **Data display by protected features and management sub-areas**: users should be able to visualize data based on protected features and sub-areas of management, such as restrictions or regulations.

4. **Geographic information system (GIS) logic**: incorporating GIS logic would enable the assessment of coherence and connectivity within the MPAs.

5. **Attribute information of datasets**: users should have access to detailed attribute information associated with the datasets displayed on the map.

6. **Overlay possibility with modelling data**: the MPA Portal should offer the option to overlay modelling data, including seasonal variations or life-stage considerations.

The map implementation should also facilitate spatial queries, including:

- Querying data by location, such as species or human activities within selected MPAs.
- Identifying pressures and management measures within the MPAs.
- Providing general information about each MPA, including listed features and habitats.
- Displaying area sizes of different features within the MPAs.
- Presenting indicators, habitats and special protection areas (SPAs) within the MPAs.
- Calculating queries for percentages, coverages, boundaries, and areas.
- Providing summary information about the networks according to specific topics per MPA.
- Detailing management measures in place within the MPAs.

Additionally, the MPA Portal should support temporal comparison, allowing users to track changes over time, such as fluctuations in species numbers within an MPA.

## Summary of overall input and impressions from the MPA Portal workshop

One of the set goals of the workshop was to assemble a team of volunteers interested in portal development. However, due to the limited number of workshop attendees, this objective was only partially achieved. Nonetheless, all other targets were successfully met, with conference questions addressed and numerous new ideas gained.

Some participants had previously contributed to the development of the current MPA database and had been actively using it. Their firsthand experience with the software revealed deficiencies, leading to valuable improvement suggestions. Additionally, newcomers to the software brought fresh perspectives, drawing from their MPA management experiences from various regions around the world.

The organization of both the online and in-person workshops proceeded smoothly, with no technical glitches—a pleasant surprise. In-person attendees could observe the progress of the online workshop in real-time, facilitating seamless communication between events. Despite the intensive two-hour session without breaks, participants left feeling satisfied. The organizers found this format required more preparation but reduced the workload during

the session, enabling more interaction with participants and efficient notetaking to be carried out. This approach was preferred by participants, allowing them to remain actively engaged instead of passively consuming presentations or lectures.

The venue and facilities functioned flawlessly, and the training provided by the facilitator before the event proved fruitful, with learned methods immediately applied during the conference. The live events flowed smoothly and were conducted professionally, adhering to the schedule.

The conference provided valuable insight from users regarding the desired appearance of the MPA Portal and the most crucial features and functions needed.

## Key findings:

### User interface, functionality, and login
Feedback from the conference emphasized the need for a simple yet informative MPA portal interface. Through the selection of voted UI samples, clarity emerged on how the portal should appear and operate. A key aspect is the inclusion of an infographics panel on the front page, presenting essential MPA information and statistics. This panel should offer easy access to deeper data sections.

Given the diverse user groups, the portal should cater to both professionals and occasional visitors. One proposed solution is a login option, allowing random users to access simplified data views while professionals can utilize the portal's full capabilities.

### Streamlining professional workload
An important insight highlighted was that the MPA Portal should not burden professional users with any additional workload. Ideally, the portal would automate report generation, leveraging data from sources like the HELCOM Biodiversity Database and national databases. Manual data input should be structured, minimizing open text fields. The MPA Portal should present information clearly and offer customizable data presentation and printing options.

### GIS functionality
The absence of GIS functionalities in the current MPA database was identified as a significant deficiency. Given the spatial nature of MPA data, visual representation through maps is crucial. Layering different datasets on maps enables geospatial calculations and visually demonstrates overlapping functions.

### Harmonization of terminology
Differences in terminology among contracting parties underscore the need for harmonization. Standardized vocabulary ensures consistency in meaning across instances. Additionally, data input should be structured to streamline maintenance, enable automation, and facilitate functions such as search, calculation, analysis, and visualization.

## Communication and feedback

The new MPA Portal should serve as a communication and feedback platform for various user groups. Features like an informal "chat" for MPA managers and information sharing for the general public enhance user engagement and collaboration.

Participants emphasized the need for the MPA Portal to be up-to-date, clear, easy to use, informative, practical, and consist of harmonized data for comparisons and regional analysis. These characteristics align with the overarching goals of the portal's development under PROTECT BALTIC.



*Image 18: Participants discuss their previous use of the MPA database during the MPA Portal workshop.*

## Afternoon sessions

## Restoration



*Image 19: Lasse Kurvinen from Metsähallitus kicks off the workshop with an introduction on the Restoration Action Plan.*

## Overview

The in-person workshop on restoration was led by *Lasse Kurvinen* (WP6 lead for Restoration) from Metsähallitus Parks and Wildlife Finland. The online workshop was facilitated by *Anette Bäck*, also from Metsähallitus.

The degradation of the Baltic Sea is a universally known problem and the need for restoration efforts has been lifted in the Baltic Sea Action Plan, the EU Biodiversity Strategy and the Nature Restoration Law, as well as in national programmes.

To preserve and restore the ecosystems and functions of the Baltic Sea, large-scale, well-targeted and high-quality restoration efforts are of utmost importance. This requires action by all nine Baltic countries, but the experiences from earlier marine restorations are, in most cases, limited and the knowledge scattered.

Through PROTECT BALTIC, the aim is to streamline the learning process by uniting organizations and stakeholders from all participating countries. Leveraging their existing expertise and knowledge, the project intends to develop a toolbox and collaborative restoration action plan. This initiative will ensure that information regarding marine

restoration is readily available, promote the use of efficient and standardized methods, and assist in prioritising actions and targets.

## Methodology

In planning the workshops, the goal was to use corresponding methods for all participants to guarantee the comparability of results.

After a short introduction to the topic, participants' expectations and experience in marine restoration were reviewed using Slido. After this, the participants were moved into smaller breakout groups (maximum six participants per group) in which they received three different sets of questions to answer.

The questions were made available in a Miro board, with post-it notes for writing down thoughts and ideas also made available. Each group was asked to select one member to take notes.

The sessions included questions about:
1) the participants' roles in marine restoration;
2) the toolbox and information need; and
3) the regional restoration action plan.

To avoid disturbing the groups and due to the large number of participants who had registered for the workshop, no discussions were planned to be held between the three sessions. Instead, participants were asked to pick 1-3 main points from each session that would later be presented in the joint wrap-up session.

The online tool worked well. Since each group had 80 minutes of "undisturbed time", it was a little challenging that the maximum time for the breakout groups in the platform used to support the event was 60 minutes, and when once recalled to the joint session, it was not possible to recreate the same break out groups (at least not without having time to study this closer before). This issue was not noticed before the day of the workshop, but it did not affect the results in any higher degree, although good to keep in mind for future events.

The number of participants signed up for the workshop was 18 in Helsinki and 49 online. Of these only 44% (8) and 24% (12) showed up. Knowing the actual number of participants joining the session in advance would have enabled us to plan the sessions differently, for example by giving more time for joint discussions, and it also changed the concept of break out groups somewhat.

In the future, it would be beneficial not only to ask people to sign up, but also ask people to confirm their participation closer to the event itself.

## Preparation before the workshops

Before the sessions, participants were asked for their expectations as well as their experience from field of marine restoration. The results can be seen in Figures 22a-d.
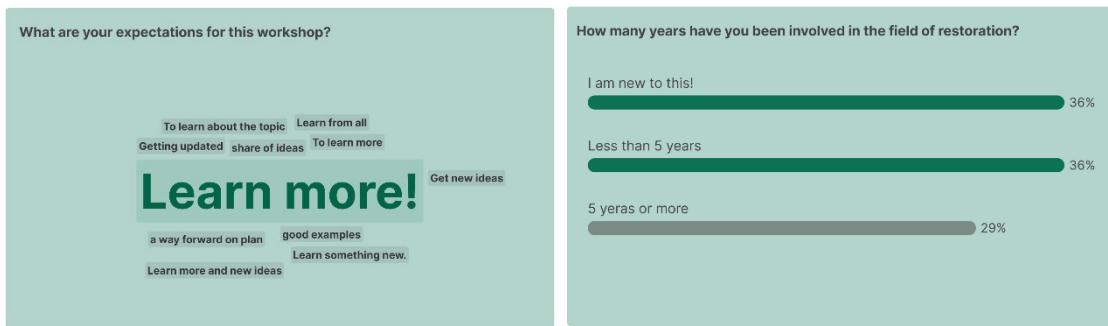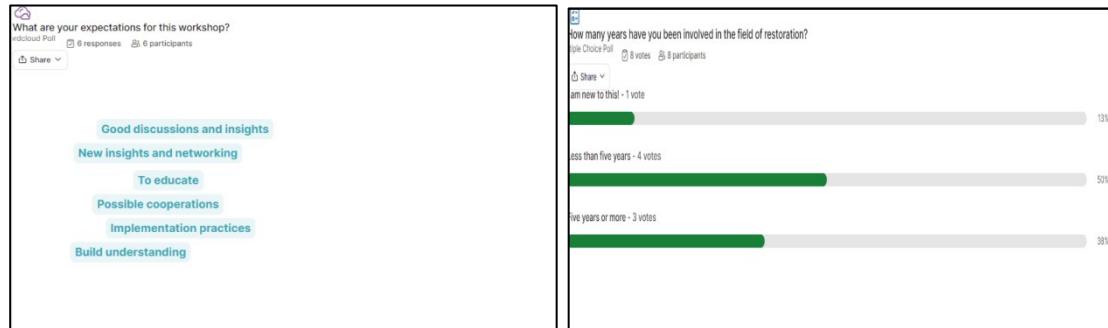
*Figures 22a, 22b, 22c and 22d: Results from Slido on participants experience in restoration and their expectations from the restoration workshop, with online and in-person responses separated.*

While there were a few highly experienced participants (with five years or more of experience), the majority were relatively new to the topic. The overall expectation among participants was to learn from each other and collectively deepen their understanding. This highlights the necessity of such cooperation and information gathering to empower Baltic countries to proactively approach and achieve the goals set for the restoration of marine areas.

## Session 1: Current and future role in regards to restoration

The first session focused on the participants' own roles in marine restoration and how the upcoming need for restoration efforts could impact them or their organisations, in both a positive and a negative way. The actual results from the first session of the workshop are summarized in Figures 23a and 23b.
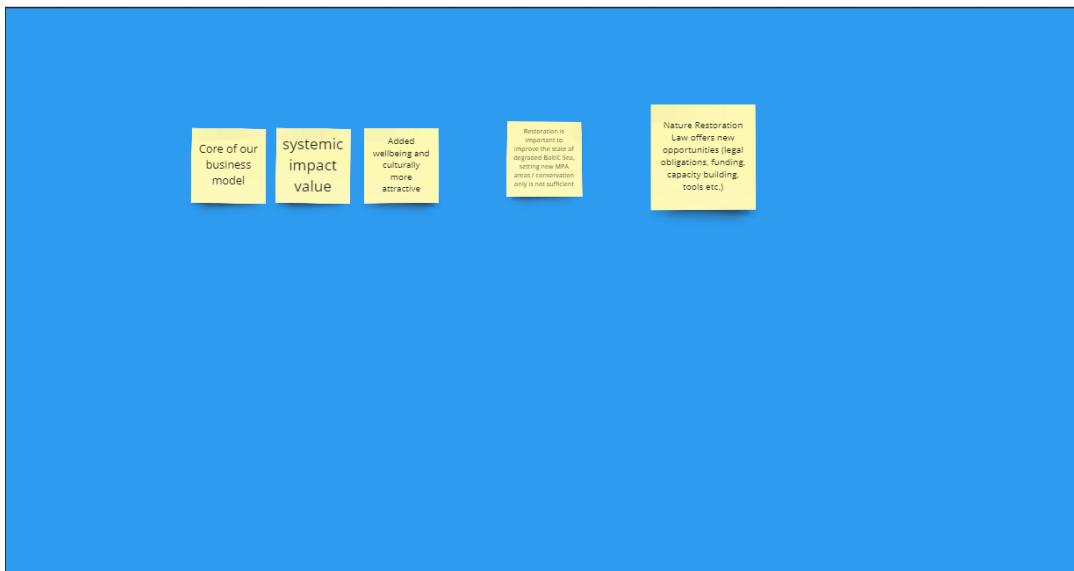
*Figures 23a and 23b: Summary of results from the first restoration workshop session on how restoration efforts could impact participants or their organizations. Above all ideas, and below 1-3 main points highlighted by each group.*

## In what way is marine restoration relevant for you?

The main point of this first session is that marine restoration is relevant to all of us in one way or another. The Baltic Sea is one of the most degraded ecosystems in the world and restoration of all ecosystems is necessary for future generations to thrive, by ensuring a healthy ocean with healthy ecosystems, ecosystem services and benefits such as fish production and fish stocks.

The field of restoration is vital for many participants, as it directly provides employment for some and is essential for others who rely on a healthy ocean for their livelihoods. The statement "We would be without a job" can thus be understood in various contexts and perspectives.

Several participants are already engaged in physical restoration as part of various projects or as a fundamental aspect of their organization's work. Additionally, some participants have compiled information on different restoration methods into national reports. These reports serve to support their physical restoration effort, streamline, and standardize national processes, and are crucial for developing the upcoming toolbox.

## How could marine restoration efforts impact you/your organization (in both a positive and/or negative way)?

The new field of restoration and especially the new Nature Restoration Law is considered to bring positive challenges to all organisations, by bringing new opportunities, a legal obligation to engage in marine restoration, funding options, economic incentives, and capacity building.

Among the new opportunities, there is a mention of new employment prospects. The field of restoration requires new specialists, especially for long-term maintenance needs associated with many restoration projects. Additionally, there are discussions about developing new, sustainable business models with restoration in mind. This includes, for example, the potential for nature and restoration tourism development, as well as services aimed at enhancing ecosystem services. Discussion on risk management regarding private sector involvement should include the development of some form of insurance mechanism, for example.

Moreover, new funding opportunities were seen as possible. The groups identified possibilities to create new projects based on the needs that have arisen from new obligations to restore marine areas. Additionally, new funding avenues were identified, such as new partnerships between companies and NGOs focused on enhancing the company's sustainability through restoration initiatives.

The participants also acknowledged new opportunities for strengthening partnerships between terrestrial and marine areas, particularly in multifunctional areas. In many cases, the successful implementation of restoration projects hinges on addressing and improving water quality and eutrophication issues. Marine restoration efforts can also contribute to reducing eutrophication; for example, eelgrass can serve as a tool for decreasing eutrophication, but its effectiveness relies on improved water quality. Additionally, the bolstering of top predator fish populations was highlighted. The role of climate change adaptation was mentioned, emphasizing the importance of developing holistic approaches to restoration and environmental management.

## Session 2: Toolbox development and needs

The second session of the workshop was centred around the development of a toolbox and the information requirements for the participants. They were tasked with listing their desires regarding the toolbox's functionality, accessibility, and other informational needs pertinent to their work. The specific outcomes from this session can be seen in Figures 24a and 24b.
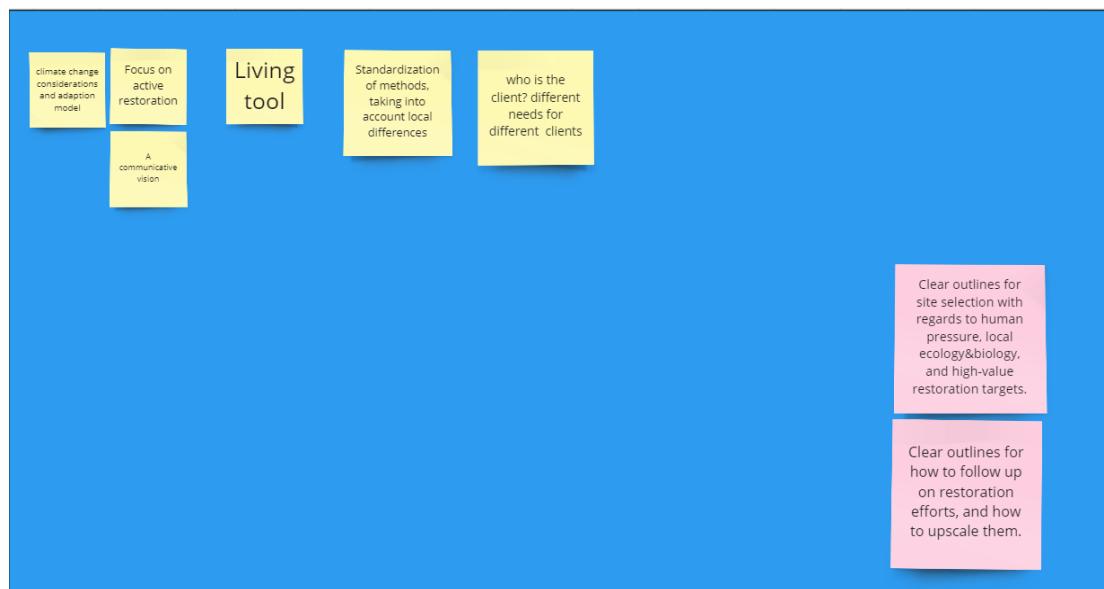
*Figures 24a and 24b: Summary of results from the second restoration workshop session on how restoration efforts could impact participants or their organizations. Above all ideas, and below 1-3 main points highlighted by each group.*

## In your opinion, what is a restoration toolbox? What type of information should a "restoration toolbox" contain? And what would be the most useful format for disseminating the restoration toolbox?

For the toolbox, it is important to define the audience and set the language at such a level so that all users can understand. There are already a lot of methods and reports gathering information, so let's not reinvent the wheel, but build on the existing knowledge and infrastructure that is in place.

The toolbox must be aligned with the Nature Restoration Law. Additionally, it is essential to consider the national legislation of each country, requiring the involvement of experts knowledgeable about the legislation in each respective country.

The toolbox should primarily emphasise active restoration methods, although a combination of approaches is often necessary. The focus is on rewilding rather than attempting to recreate past conditions, as this is rarely feasible.

It should include methods for restoring specific species, habitats, areas, and ecosystems, while also considering biobased supply chains. Support for prioritization is essential, accommodating different scales of action from local to large-scale initiatives.

It should provide connections to relevant individuals, such as method experts, collaborative partners, and organizations for implementation. Additionally, recommendations for cross-border cooperation, particularly regarding fish species, are necessary.

The toolbox should function as a living, continually updated database, and should incorporate an obligation on users to share new experiences. It should encompass best practices and also information on methods that proved ineffective (worst practices).

Given the limited experiences and monitoring available, it's often challenging to definitively determine what works and what doesn't. Therefore, the inclusion of monitoring aspects is just as crucial as the restoration methods themselves.

Another highlighted topic was ecological compensation and carbon sequestration.

In your opinion, what kind of information is most useful to receive regarding different aspects of marine restoration, for example, regarding the Baltic-wide Restoration Action Plan under development? And how would you prefer to receive this information?
While this question was part of the workshop, the discussions during this session centred around the previous question.

## Session 3: Development of the regional Restoration Action Plan

The third session of the workshop was centred around the development of a regional restoration plan and the needs and bottlenecks that participants can see. The specific outcomes from this session can be observed in Figures 25a and 25b:
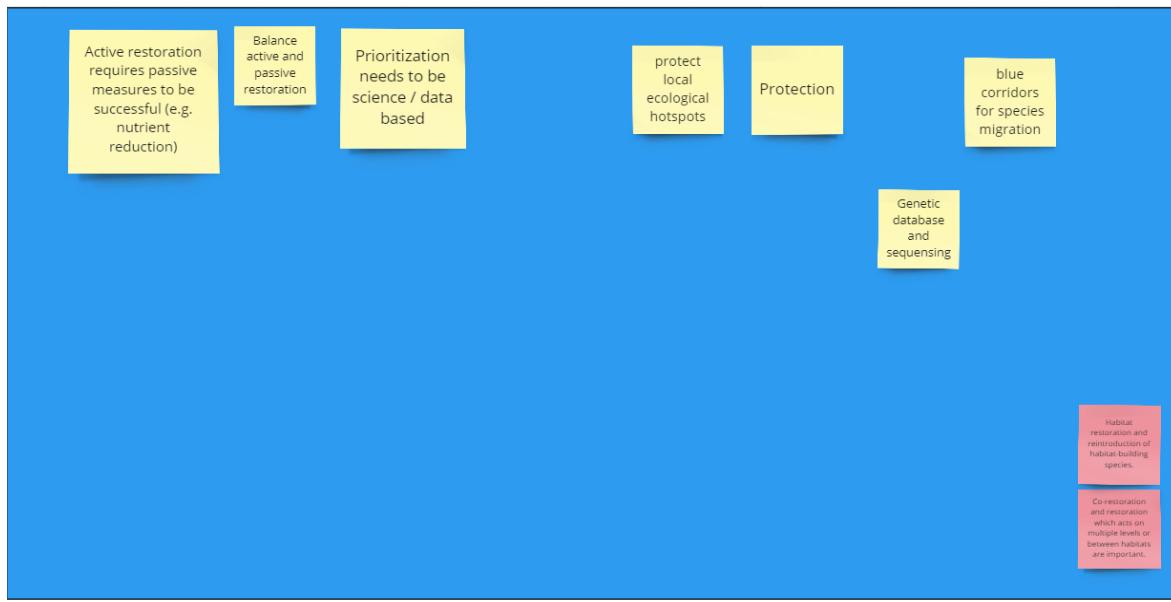


*Figures 25a and 25b: Summary of results from the third restoration workshop session on how restoration efforts could impact participants or their organizations. Above all ideas, and below 1-3 main points highlighted by each group.*

## With limited resources, what should be prioritized concerning Baltic Sea marine restoration actions in your view?

Discussions in this group revolved around the challenges of prioritization due to the lack of monitoring and consequent uncertainty about the effects of restoration efforts. Participants emphasized the importance of prioritizing based on data, research, and monitoring, striking a balance between active and passive restoration methods, often requiring a combination of both approaches.

On the other hand, there is a pressing need to establish priorities to initiate action. During the discussions, there was a suggestion to commence with habitats and species pivotal to habitat construction, emphasizing the potential for collaborative restoration efforts to maximise outcomes relative to investment. With limited time, it is imperative to engage in cooperative restoration efforts across various levels. Furthermore, there was a notable emphasis on the significance of top predator species and ecosystem services.

Prioritization efforts should encompass monitoring initiatives, cost-effectiveness analyses, and spatial assessments aimed at identifying impactful and successful interventions at a sub-basin level. The upcoming Nature Restoration Law plays a pivotal role in guiding these endeavours. Addressing data deficiencies, particularly pertaining to habitats, species, genetics, and ecological hotspots, is crucial. Moreover, considering connectivity aspects such as blue corridors is essential in restoration planning.
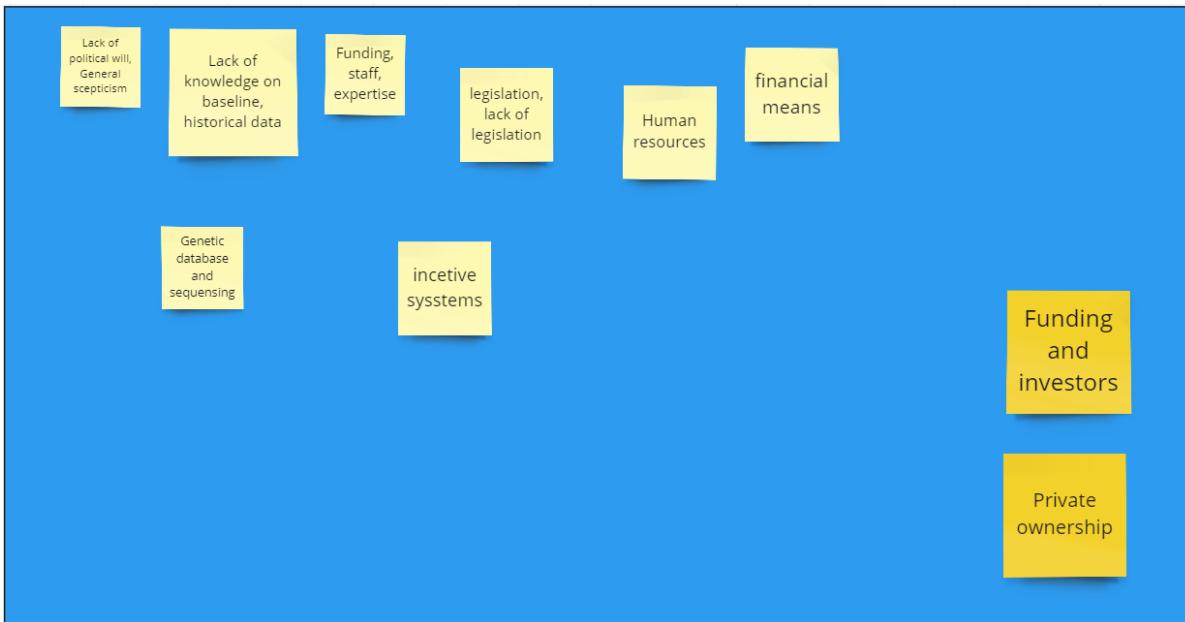
*Figures 26a and 26b: Summary of results from the third and second sessions on how restoration efforts could impact participants or their organizations. Above all ideas, and below 1-3 main points highlighted by each group.*

## In your opinion, what are the bottlenecks concerning different aspects of restoration?

The main bottlenecks identified include funding, knowledge gaps, cooperation challenges, and land ownership issues.

The limited understanding of the effectiveness of restoration measures hinders the strategic allocation of resources. Once again, the importance of monitoring is emphasized, as this is key to gaining the necessary knowledge. Demonstrating effectiveness is crucial to garner political support and public interest, ensuring sustained long-term funding and adequate legislation.

In the Baltic region, large areas are privately owned, and landowners hold legal priority and have vested interests. Enhanced knowledge would aid in planning processes, showcasing potential positive outcomes for landowners.

A lack of historical data is a constraint in planning processes, as it hampers the setting of goals and aims of the restoration's efforts. Limiting is also the sparse availability of experts within this area. Additionally, the lack of cross-sectoral cooperation limits development efforts. These challenges underscore the need for enhanced collaboration, knowledge sharing, and strategic partnerships to overcome barriers and achieve successful restoration initiatives.

## Summary of overall input and impressions from the Restoration workshop

The workshop gathered 20 participants from a wide range of sectors. The level of experience varied, with most participants quite new to this subject. Through active discussions during

the workshop, participants provided valuable insights and suggestions regarding the development of a restoration toolbox and a Baltic-wide Restoration Action Plan:

## Restoration Toolbox definition

Participants agreed that a restoration toolbox should cater to diverse audiences, ensuring clear language and accessibility. They stressed the need to build on existing knowledge and infrastructure rather than reinventing methods.

## Key Toolbox components

**Legal framework:** The toolbox should align with ecosystem restoration laws and national legislation, involving experts in relevant fields.

**Methodology focus:** It should cover primarily active methods, although often a combination of active and passive restoration is needed.

**Information structure**: The toolbox should list restoration methods for specific species, habitats, and ecosystems, offering support for prioritization, scaling, and links to experts and collaborative partners.

**Dynamic database:** Participants stressed the importance of a living database that includes both best practices and failed methods, along with monitoring aspects.

Regarding the most useful information for marine restoration and the Baltic-wide Restoration Action Plan, participants emphasized the need for data-driven decision-making through research and monitoring. They highlighted the challenges of prioritizing actions due to limited resources and lack of monitoring data.

Suggestions included starting with habitat restoration, co-restoration efforts, and prioritizing top predator species and ecosystem services. The session underscored the importance of addressing funding, knowledge gaps, cooperation challenges, and land ownership issues through enhanced collaboration and strategic partnerships. Monitoring was considered fundamental for the solutions to these problems.
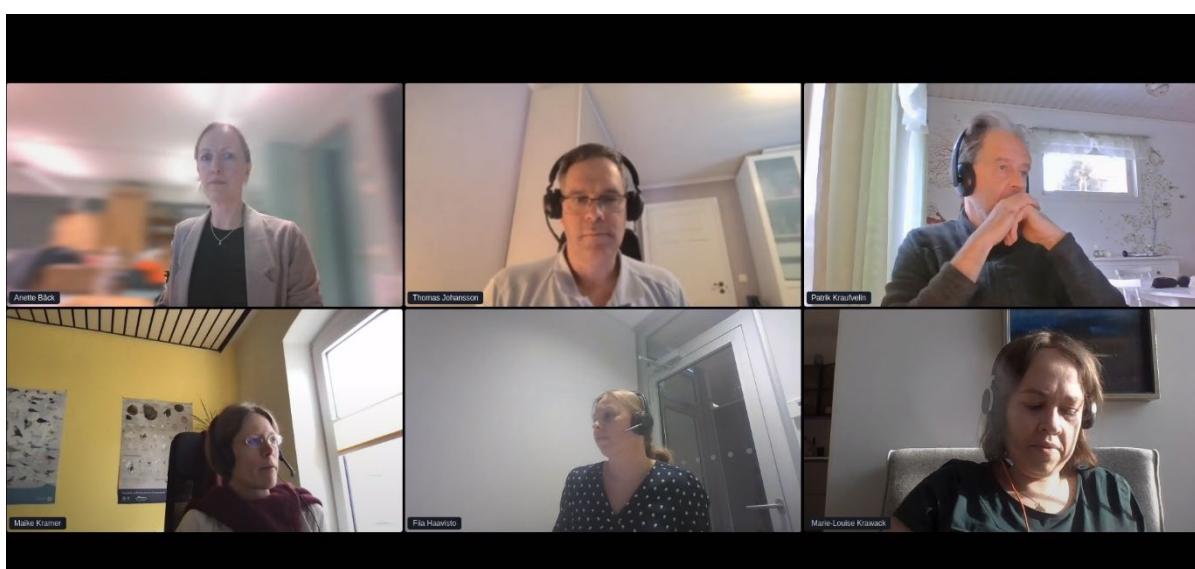


*Image 20: Anette Bäck from Metsähallitus leads conversations during the online workshop for restoration.*

## Key findings:

### Clear aims and monitoring of restoration actions

The lack of historical data presents challenges in defining clear restoration objectives. Even with historical data, determining the natural development of an untouched area is complex. It's crucial to acknowledge that restoration doesn't aim to revert areas to a past state but to guide them toward a state they would have naturally achieved by now. Obtaining such insights requires careful consideration. Strategies like ecological modelling, studying similar ecosystems, and consulting with experts can aid in understanding natural development and setting realistic restoration goals aligned with current ecological conditions.

The focus on monitoring emerged as a critical aspect during discussions, emphasizing the necessity for comprehensive, standardized, and long-term monitoring of restored areas. This is crucial for prioritizing areas and actions effectively, getting political and public support, and ensuring cost-efficient measures. Given its significance, there is a need for dialogue with the monitoring task leads and to develop strategies for monitoring that align with the goals of restoration efforts to maximize their effectiveness.

The importance of having easily accessible and updated information on restoration methods was emphasized as a crucial component of the toolbox. However, restoration efforts can encompass various aspects, including the habitat, specific species, or ecosystem services. This raises the question of whether the toolbox should have a generalized approach or if it's something that requires a case-by-case consideration on what to focus.

### Thought-out and data-driven prioritization of actions

Targets for marine restoration are set at both a regional and national level. The regional restoration action plan needs to ensure that the goals are aligned with all levels or, at the very least, for the goals to not be contradictory. Restoration actions will be taken on several levels: from local to large scale/regionally. It needs to be considered on which level the restoration action plan should focus on.

### Different actors need to be involved for effective implementation

Cross border and cross sectoral cooperation are essential to move broad-scale restoration of marine actors forward. Bringing a wide range of actors into this work, on the other hand, might bring risks into the equation, which need to be considered. Risk management is necessary and solutions to decrease these risks evaluated.

For planning the two tools (toolbox and regional restoration plan), the workshop gave many valuable insights. One of the more concrete ideas that arose from the discussions is to create a two-part toolbox, of which one is more general and describes the planning process step-by-step, and the other a database with a living, specific description and information of methods and experiences from previous actions.

## Governance
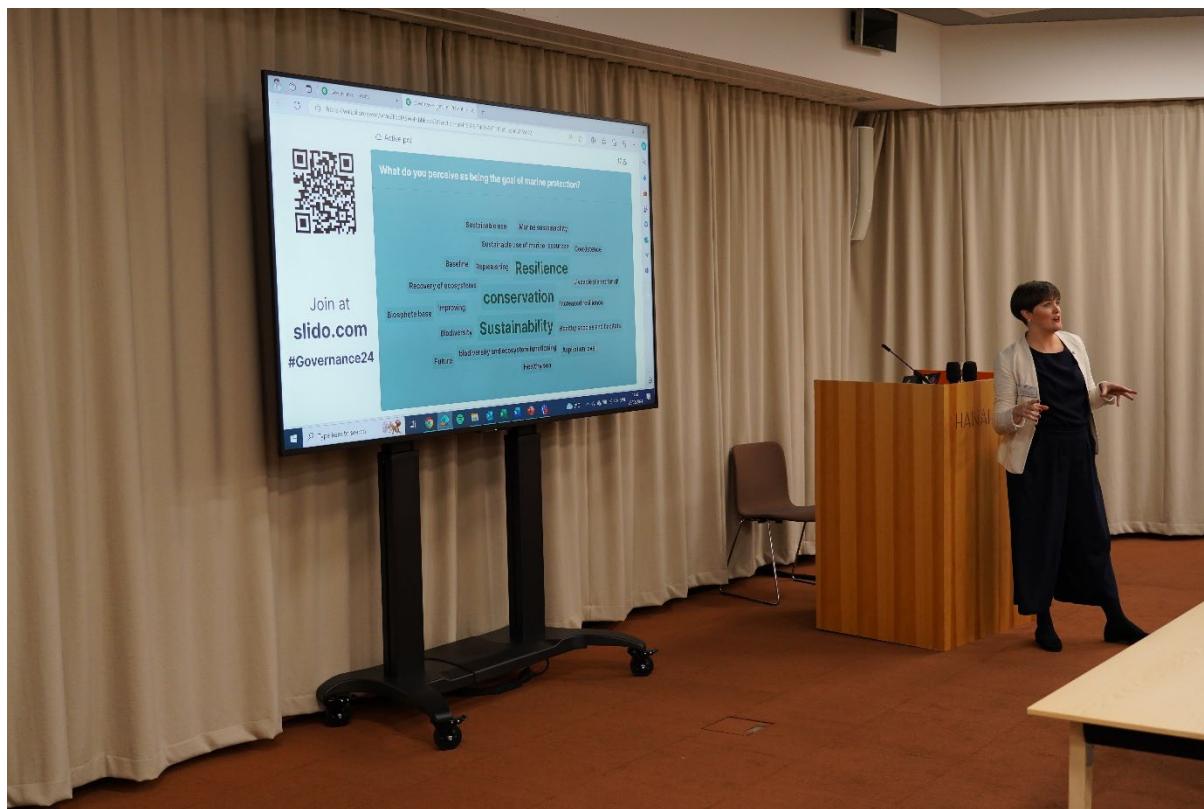


*Image 21: Jannica Haldin leads conversations on the goal of marine protection is during the in-person Governance workshop.*

## Overview

*Jannica Haldin*, Project Manager for PROTECT BALTIC (and WP6 lead for Governance), facilitated the in-person workshop. *Venla Ala-Harja* and *Aino Ahvo* from the HELCOM Secretariat ran the online workshop.

Governance plays a pivotal role in shaping the foundation for protection measures. However, the term itself is broad and complex, and often perceived as convoluted or bureaucratic, and governance of marine protection is no exception in this.

The UN Environment Programme (UNEP) provides a comprehensive definition of environmental governance, highlighting its role in regulating human behaviour in relation to the environment. In practical terms, UNEP elaborates that environmental governance defines the goals and objectives of actions to be undertaken. It delves into the intricacies of decision-making processes, specifying who decides, how decisions are reached, and how stakeholders can participate in decision-making.

Moreover, governance extends beyond decision-making to include agreements on the execution of these decisions. This includes defining the responsibilities of various actors involved in implementation and ensuring accountability for any actions taken. Essentially, governance determines not only what needs to be done but also how it is to be carried out and by whom.

Perceptions of what constitutes good and efficient governance, as well as the processes involved, can vary significantly among stakeholders. Conflicting interests and potential resource limitations further complicate the effective governance of marine protection and differences in governance structures and processes between countries can impede transboundary cooperation. Collectively, these challenges can make it difficult to secure good governance and, subsequently, achieve desired protection outcomes.

A key aspect in achieving tangible, real-world environmental changes is to use the best available scientific information as a basis for optimizing governance. As part of Work Package 6, PROTECT BALTIC is working to support improved transboundary governance of marine protection in the Baltic Sea region. The aim is to strengthen biodiversity outcomes in protection efforts by leveraging scientific insights and fostering collaboration across borders.

## Methodology

Participants were asked to categorize themselves into one of seven stakeholder groups (identified based on the sector information provided by participants registered to the workshop), each represented by the use of a specific colour for consistency throughout the workshops. The images within this section each have a key linking the coloured post-its (both online and in-person) to the relevant stakeholder groups as follows: blue for national governing bodies, dark yellow for civil society, red for international governing bodies, orange for the service sector, green for national implementers, pink for research and academia, and light yellow for industry.

A blend of rapid surveys in Slido and stakeholder elicitation techniques was used. Participants were presented with a series of questions and asked to provide their views on post-it notes within a limited timeframe. The approach aimed to encourage participants to prioritize sharing their own insights before exploring those of others.

The facilitators grouped and sorted the notes as they were submitted, aiming to identify shared themes or views. Once the time to provide input concluded, the facilitators presented the compiled views, along with the reasoning behind the proposed groupings. Participants were then invited to ask questions, propose alternative groupings, suggest relocating input between or across themes, and offer additional views.

In some cases, responses from a preceding question were transferred and provided the basis for the next task. For instance, participants were initially asked to identify components of good governance. Subsequently, they were asked to arrange these components into a cohesive governance process or structure. During this stage, participants discussed how to collectively organize and structure the components into a framework that the entire group could endorse. Additionally, participants were occasionally prompted to vote to help prioritise input provided under a question.

A breakdown of the responses given can be found in Annex IV.

## What part of the Baltic Sea do participants consider that they represent?

Participants in both the in-person and online workshops were instructed to place themselves on a map of the Baltic Sea region, indicating the sectors they represented in various areas. To maintain consistency, the same color-coded post-it notes (as per the key in Figure 27) were utilized in both settings, ensuring uniformity in responses across the workshops.



*Figure 27: Distribution of participants across the Baltic Sea in both workshops. The colour key represents the stakeholder groups participants identified themselves as belonging to.*

## What do participants perceive as being the goal of protection?

Participants in both workshops were asked to respond to a question in Slido on their perceptions of what the goal of protection should be, the setting of goals and objectives being a key aspect of governance. Slido was then used to generate a word cloud from each workshop, highlighting the key goals highlighted by participants. The responses were used to provide information to the group on the different perspectives present.
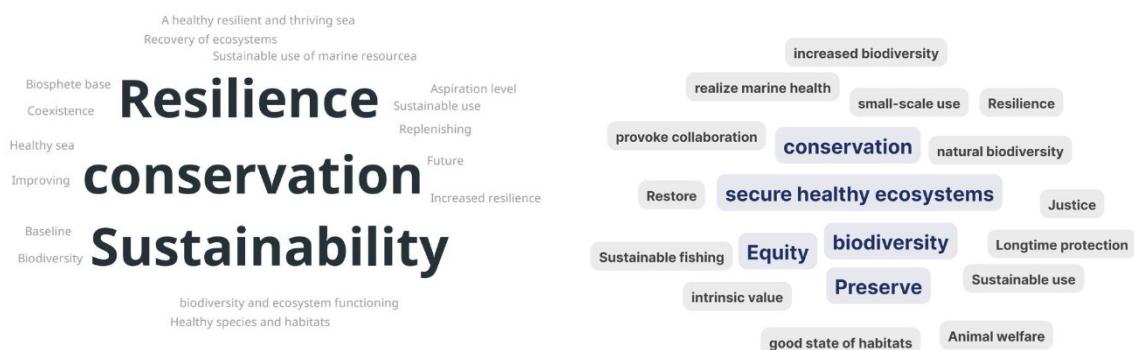


*Figures 28a and 28b: Word clouds representing what participants consider as the goals of protection for the Baltic Sea. In-person responses (left-hand side) and online replies (right-hand side).*

For the in-person workshop, the key terms associated with the goals of protection were resilience, sustainability, and conservation. Sustainability was also highlighted by participants in the online workshop, though more key terms in relation to protection goals were highlighted including biodiversity, equity, preservation, and healthy ecosystems.

## How do participants view governance?

During the in-person workshop, participants emphasized that governance encapsulates the actors, processes, and frameworks guiding decision-making. Essentially, it delineates the operational procedures, including the roles and responsibilities of decision-makers. The in-person participants acknowledged that governance decisions address the reasons, objectives, and geographic scope of actions, while also specifying how and by whom these actions will be implemented, with an overarching aim of reconciling divergent interests (see Figure 29). Additionally, most of the in-person participants recognized the relevance of MPA governance to their respective roles.



*Figure 29: In-person input provided by participants on the question of how they would explain governance to someone unfamiliar with the concept.*

Similarly, online participants highlighted that governance serves as the framework, structures, and platform for decision-making, setting forth rules, principles, and norms that legitimize protection efforts. They stressed that governance should ensure the adequacy of protection levels and offer guidance for implementation, ensuring compliance with regulations. Additionally, governance encompasses the individuals and institutions involved in decision-making, planning, management, and implementation processes. Some participants noted that transboundary decision-making is a component of governance and described governance as generally top-down (see Figure 30).

When asked about the relevance of MPA governance, participants underscored its centrality to the effectiveness and success of MPAs in establishing a functional and representative protection network. They highlighted its role in safeguarding nature values for future generations and fulfilling both national and international obligations for protection.



*Figure 30: Online input provided by participants on the question how they would explain governance to someone unfamiliar with the concept.*

## What are important building blocks for good governance?

In-person stakeholders provided extensive input on the components for good governance (see Figure 31). Several key themes emerged prominently, such as transparency, accountability, adaptability, cooperation, inclusivity, representativeness, trust, respect, establishment of clear shared goals, and a robust knowledge base.

Additionally, emphasis was placed on access to sufficient resources, long-term planning, and the ability to prioritize and make trade-offs between conflicting interests when consensus

cannot be reached. Furthermore, participants underscored the vital importance of securing buy-in and ensuring commitment to implementing decisions once they have been made.
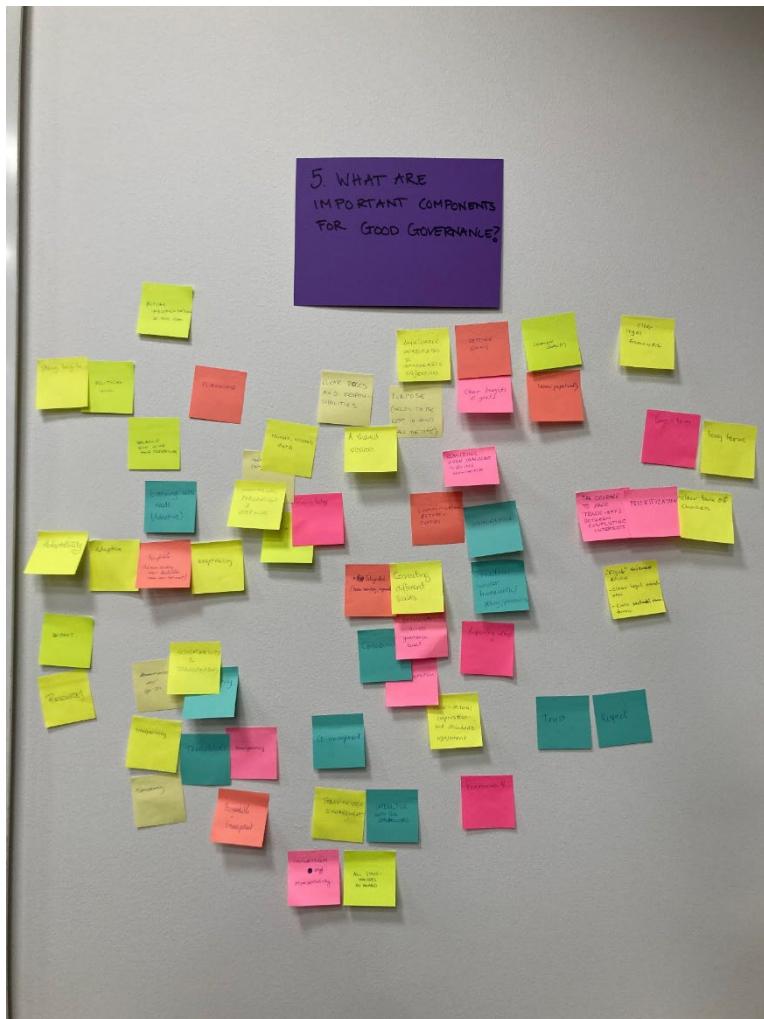


**Colour coding is identical across both workshops**

- blue=national governing body
- dark yellow=civil society
- red=international governing body
- orange=service sector
- green=national implementer
- pink=research and academia
- light yellow=industry

*Figure 31: In-person input provided by participants regarding the key components of good governance.*

Online participants echoed similar themes (see Figure 32). Alongside the importance of a long-term perspective, they also emphasized the significance of short-term goals. To measure success in achieving these goals, they stressed the need for objective methods and infrastructure to store collected data for review, auditing, and effectiveness checks.

Information sharing among countries and stakeholders, fostering networks and collaboration, and avoiding silo thinking were deemed crucial. Money and resources emerged as central components, closely tied to political will, while the ability to control activities was highlighted. Continuity, consistency, and precautionary management were emphasized, alongside the importance of common terminology for national and international collaboration. The ability and willingness to engage with diverse stakeholders,

include them in decision-making, and employ effective moderation techniques in discussions and negotiations were also emphasized.

Additionally, social sustainability, alongside ecological sustainability, was highlighted in various contexts. Notably, participants advocated for incorporating those with no voice, e.g. species, into discussions, as evidenced by the rallying cry, "Power to the species of the Baltic Sea!"



*Figure 32: Online input provided by participants regarding the key components of good governance.*

## How do participants perceive a good governance process/structure?

Participants were tasked with structuring the components they provided in the previous question to reflect their consensus view of a good governance process or structure.

In-person participants recognized that while the components that were provided represented different aspects of a good governance process (see Figure 33), some of the components do not represent actual steps in a governance process but should be integrated throughout the entire process. It was agreed that these components can be grouped into two key aspects of governance. These two aspects, along with the components they encompass, are as follows:

**Fundamental principles:** Transparency, trust, respect, accountability, inclusiveness, representativeness, and long-term planning.

**Enabling factors:** Resources, reliable, accessible, and timely data, communication, horizontal and vertical cooperation, and connecting different scales to utilize synergistic potential.

The in-person participants agreed on the following structure for the remaining components to reflect a good governance process:

1. **Creating and agreeing on a shared framework**: this includes defining attainable and measurable goals, objectives, and targets linked to management.
2. **Securing buy-in and political support**: this step emphasizes garnering support for the framework.
3. **Translating goals and objectives into a clear legal framework**: Establishing clear roles and responsibilities in relation to implementation. Participants emphasized the importance of recognizing situations where consensus cannot be reached, necessitating prioritization and trade-offs in line with agreed goals and objectives.
4. **Implementing decisions**: Ensuring sufficient allocation of resources.
5. **Monitoring and evaluation**: Assessing the consequences of decision implementation.
6. **Learning and adaptation**: Revisiting and adapting the governance process and decisions based on new information.

Participants strongly emphasized that stakeholder engagement should be incorporated at each step and that decisions often need to be made in the absence of certainty, where the precautionary principle should be applied. They were also asked to indicate at what point in the governance structure/process they would like to be involved, as shown on the right-hand side of Figure 33.



*Figure 33: Participants organised the input provided on components into a governance structure and/or process (left-hand side) and indicated at which point they would like to be involved (right-hand side).*

Online participants emphasized the importance of adopting an adaptive management approach, wherein clear objectives are established, and comprehensive data collection and storage systems are used to analyse and assess outcomes. After review, necessary changes and improvements are implemented.

It was noted that from an ecosystem perspective, national borders are irrelevant, and therefore transboundary collaboration is essential. Additionally, the concept of polycentric governance was highlighted, along with the establishment of co-management committees involving local actors, such as fishers, in decision-making processes to foster commitment toward shared goals.

Consequently, governance should be both local and international in scope. It was suggested that politicians and various interest groups should be involved in discussions from the project's inception. Collaboration, including non-human species, was also underscored as essential.



*Figure 34: Online participants organised the input provided on components into a governance structure and/or process, and indicated at which point they would like to be involved.*

## What are the strengths of current MPA governance systems?

In-person stakeholders acknowledged several positive aspects of current MPA governance in the Baltic Sea. These include well-defined legal frameworks, established goals and target years, a clear understanding of the challenges, and robust scientific foundations. However, cooperation was overwhelmingly recognized as the strongest aspect of the current MPA governance system in the Baltic Sea.

Figure 35: In-person participants were asked to provide their views on what the strengths of current MPA governance are, and subsequently vote on which of the listed strengths is the strongest (dots provided on the notes).



Figure 36: Online participants were asked to provide their views on what the strengths of current MPA governance are, and subsequently vote on which of the listed strengths is the strongest (dots provided on the notes).

Many of the online stakeholders recognized that the willingness to cooperate for good protection around the Baltic Sea and sharing a common goal is a strength in current MPA governance. This was also voted by many to be the strongest strength.

Other strengths that were identified by the online participants included the increased use of bottom-up approaches, and increased awareness of e.g. climate change and species collapse

and their environmental and social impacts. More detailed successes were the MPA governance framework implemented in Sweden and individual MPAs that have a dedicated governing body.

## What are the weaknesses of current MPA governance systems?

A lack of resources was the weakness most often recognised by in-person participants. That said, the participants agreed that the primary weakness of the current governance of MPAs is that economic and sectoral interests are very often prioritised over those of protection, contrary to the agreed goals and objectives.

Other weaknesses recognised included a lack of buy-in, top-down and often fragmented processes, insufficient stakeholder engagement, short-term thinking, a lack of data for informed decision making, a lack of political will and the overall complexity of MPA governance.



*Figure 37: In-person participants were asked to provide their views on what the weaknesses of current MPA governance are, and subsequently vote on which of the listed weaknesses represents the weakest point (dots provided on the notes).*

Online participants highlighted several weaknesses in current MPA management and governance. Foremost among these is the fragmentation across sectors, where communication breakdowns exist between MPA designation, maritime spatial planning (MSP), and land use sectors. Additionally, some participants noted the persistence of top-down governance approaches, which hinder true participatory processes that consider diverse perspectives.

Many also expressed concerns about the ecosystem's health and the long-term well-being of society being overlooked. Moreover, participants pointed out the lack of a clear definition for the optimal protected network of MPAs and a Baltic-wide framework for protection. Better cross-border cooperation is deemed essential.

*Figure 38: Online participants were asked to provide their views on what the weaknesses of current MPA governance is, and subsequently vote on which of the listed weaknesses represents the weakest point (dots provided on the notes).*

## If there were no restrictions, how could MPA governance be improved?

In-person participants offered several suggestions for improving current MPA governance. These include building trust and securing full buy-in from stakeholders by reconciling objectives, establishing shared goals and targets, and providing clear mandates underpinned by legislation.

Participants also repeatedly emphasized the importance of constant and clear communication and awareness-raising efforts to ensure that all stakeholders understand the necessity for protection.

Other recognized ways to enhance protection governance processes included allocating sufficient resources, ensuring availability of adequate data, and streamlining decision-making processes.

The consensus was that at the core of improving governance for protection there is a need to fundamentally change society's perception of its relationship with nature. Prioritizing biodiversity and protection is seen as essential for sustainable use, and this shift in perspective should be reflected in governance processes.

*Figure 39: In-person participants were invited to provide suggestions for how to improve governance, disregarding any limitations, including but not limited to targeting the weaknesses identified previously.*

Online participants highlighted numerous similar aspects regarding the improvement of MPA governance. They emphasized the importance of communication and cooperation across different levels, advocating for open platforms to discuss issues and engage with the public. These efforts aim to make governance processes more inclusive and democratic, even advocating for representation for different ecosystem components, i.e. giving a voice to nature.

Additionally, participants expressed a desire for more data, knowledge, and evaluation to support science-based policy and governance, including inputs from social sciences. Cross-border cooperation, especially among adjacent MPAs, was deemed crucial. Participants also emphasized the need for measures to address various pressures, including addressing historical issues such as toxins in sediment.

They advocated for increased resources for overall management, suggesting that each MPA should have a dedicated managing body and be governed inclusively, possibly through co-management approaches. Furthermore, participants stressed the importance of adopting a

precautionary and holistic approach in setting up and managing MPAs, including considerations for climate resilience.



*Figure 40: Online participants were invited to provide suggestions for how to improve governance, disregarding any limitations, including but not limited to targeting the weaknesses identified previously.*

## Summary of overall input and impressions from Governance workshop

The workshop gathered participants from a wide range of sectors. Their role in governance processes varied, with participants ranging from those working directly in national governance, to those implementing it, researching it or taking part in governance processes as a stakeholder.

Through active discussions during the workshop, participants provided valuable insights on the perception of governance processes, the view of what represents good governance, the current situation and what is needed to improve transboundary governance in relation to protection.

Participants expressed their appreciation for the flow and structure of the work and the discussions in the workshop, and several participants said they left the workshop feeling inspired, motivated and with new ideas and information. However, feedback on the topic revealed that the discussions evoked a sense of being overwhelmed by the complexity of multisectoral governance. Additionally, participants expressed a bittersweet sentiment regarding the differences between the ideal governance scenario and the current reality.

## Key findings:

## Understanding governance in marine protection

Governance is seen as the framework, processes, structures, and platform for decision-

making, setting the rules, principles, and norms of protection, and legitimizing how to protect.

This perspective aligns with the outline from the UN Environment Programme (UNEP) outline about environmental governance as the policies, rules and norms that govern human behaviour in relation to the environment.

The workshop participants summarized the goals of marine governance as: protection and securing healthy ecosystems, sustainable and equitable use of marine resources and preserving these for the future.

Governance was seen as central for the effectiveness of MPAs, as well as for the success in securing nature values and fulfilling the national and international obligations for protection.

## Strengths and weaknesses of current MPA governance

Views on the strengths and weaknesses were similar, if not the same, across the in-person and online workshops.

Cooperation among Baltic Sea nations for marine protection and the shared pursuit of common goals are seen as strengths in current MPA governance. However, significant weaknesses, such as fragmented governance and the frequent prioritization of short-term economic interests over protection, were pointed out. The lack of transboundary collaboration hampers efforts to emphasize ecological perspectives and establish an optimal network of MPAs, forming a Baltic-wide framework for protection.

MPA governance is generally viewed as a top-down approach, failing to implement genuine participatory methods and adequately consider diverse perspectives. Insufficient stakeholder engagement is seen as linked to a lack of buy-in, which in turn hampers the achievement of protection targets.

Recognized legal frameworks, established goals, and target timelines were also highlighted as positive aspects of current MPA-related governance. Increasing awareness of climate change and species collapse is seen as a lever for change, indicating a growing acknowledgment of the need for protection.

Effective governance and policy should be grounded in scientific knowledge and evaluation. A robust knowledge base, including objective methodologies and ongoing monitoring, is considered essential for decision-making. There is a call for more explicit data sharing and storage, making it accessible to various stakeholders. Additionally, a multidisciplinary approach is proposed.

## Solutions to enhance governance

Trust in effective governance models emerged as a key solution for driving community-led protection initiatives. Examples like Sweden's successful MPA governance framework and MPAs with dedicated governing bodies were underscored as models to emulate.

Proposed solutions to bolster protection governance encompassed engaging individuals across various levels, from local to global, and adopting an adaptive management approach with well-defined objectives, sufficient data, and the capacity for learning and adaptation. Transformative shifts in societal perceptions of nature and its relationship with society are deemed essential to surmount existing barriers to protection.

## Monitoring



*Image 22: Georg Martin from the Estonian Marine Institute at the University of Tartu runs the monitoring workshop engaging stakeholders on the question of who should be responsible for monitoring and who should cover the costs.*

### Overview

The in-person workshop was facilitated by *Georg Martin* (WP6 lead for Monitoring) from the Estonian Marine Institute at the University of Tartu. The online workshop was led by *Hanna-Eliisa Luts*, who is also from the Estonian Marine Institute at the University of Tartu.

Effective monitoring is the cornerstone of successful MPA management. It serves as the primary mechanism for understanding the status and trends of key ecological parameters within these designated marine zones. Through systematic data collection and analysis, monitoring enables stakeholders to assess the effectiveness of protection measures, identify emerging threats, and guide adaptive management strategies to ensure the long-term sustainability of marine ecosystems.

In the workshops, participants engaged in in-depth discussions aimed at elucidating the ideal characteristics of MPA monitoring programs, the types of information they should produce, and the responsibilities associated with their implementation. Insights were gathered from the stakeholders who took part, with the overarching goal to foster dialogue and collaboration among stakeholders to design robust monitoring frameworks that are tailored to the unique characteristics of MPAs.

Central themes that were explored included key parameters for assessing MPAs (including biodiversity, anthropogenic pressures, water quality, soil coverage etc.), the frequency of monitoring, who is responsible for monitoring, the best methods available, and overarching principles guiding data reliability, accessibility and comparability.

## Methodology

In both the in-person and online workshops, a Miro board was used to facilitate discussions and visualize participant ideas. Miro provides a digital canvas where participants could contribute in real-time, share their thoughts, and collaborate on topics related to MPA monitoring.

However, when executing the workshop some challenges related to the internet connection were encountered. At the outset of the session, when attempts to share the screen to display PowerPoint slides were made, the connection experienced significant disruptions and this resulted in poor audio and video quality. Despite efforts to rectify this issue, the connection remained unstable until sharing the screen was stopped.

Despite these connectivity challenges, the workshop proceeded, and once the screen sharing ceased, participants continued to actively engage in discussions, contributing their expertise and insights to the topics at hand.

## What should an ideal MPA monitoring program look like? What are the parameters, frequencies, responsibilities, data flow and storage, reporting etc.?

An ideal MPA monitoring program should encompass a comprehensive set of parameters, tailored frequencies, clear responsibilities, streamlined data flow and storage, and transparent reporting mechanisms. Parameters to be monitored include pressures, water quality indicators, endangered species, soil coverage, macroalgae, macrozoobenthos, biodiversity (possibly indexed), new species listed by EU and HELCOM, birds (both wintering and migratory), marine mammals, fish, and pollution levels.

Monitoring frequencies should be customized to suit each parameter, ensuring timely and relevant data collection. Key properties of an effective monitoring program include continuous monitoring, cost-effectiveness, standardization across organizations and countries, centralized data storage, and the incorporation of MPA rotation in monitoring schedules. Reliability, open access to data, data consistency, and comparability are also essential for robust monitoring.

Reporting aspects should prioritize accessibility for the public and policymakers, with reports being easily understandable and readable. By adhering to these principles, MPA monitoring programs can provide valuable insights into ecosystem health, support evidence-based decision-making, and facilitate collaborative protection efforts across international boundaries.

## What kinds of information should an MPA monitoring program produce?

An effective MPA monitoring program should generate a diverse range of information to support assessment programs and facilitate multi-use applications. This includes data that can be utilized for various purposes, such as mapping species distributions over time, including comparisons with other protected areas like Natura 2000/special protected areas (SPAs), Ramsar sites, and important bird and key biodiversity areas (IBAs/KBAs). Additionally, the program should provide lists of red-listed species along with trends over time, and detailed information on pollutants including chemical, biological, and noise pollution.

Key outputs of the monitoring program should include maps illustrating the pressures exerted on ecosystems by different human activities, as well as maps depicting the abundance and distribution of various species, including hotspots where populations are critically impacted by human activities. Moreover, the program should generate consistent and comparable data sheets to facilitate analysis and interpretation of trends over time.

By producing such comprehensive and informative outputs, MPA monitoring programs can effectively inform management decisions, support protection efforts, and enhance understanding of marine ecosystems.



*Image 23: Hanna-Eliisa Luts from the Estonian Marine Institute at the University of Tartu leads the online workshop for monitoring discussing preferences for monitoring methods.*

## Who should be responsible for monitoring activities in the MPAs (government, local municipalities, environmental agencies, NGOs)?

Responsibility for monitoring activities in MPAs should primarily rest with governmental and environmental agencies, particularly those mandated to oversee protection efforts. If the MPA was established under national or international agreements, Environmental Protection Agencies or similar authorities should take the lead in ensuring the quality and consistency of monitoring data. Additionally, the bodies responsible for MPA management should organize and coordinate monitoring efforts, leveraging resources from various stakeholders.

There is a growing recognition of the value of citizen science in monitoring program and this approach, where relevant, encourages public participation and engagement in data collection, enhancing the breadth and depth of monitoring efforts.

Financial support for monitoring activities should be shared among national authorities and businesses operating within the marine area. For instance, businesses involved in activities like aquaculture, wind energy, or port operations should contribute to monitoring costs through environmental permits, and fishers should be encouraged to report bycatch within MPAs, as this will provide valuable data that can inform the MPA's management strategies.

National authorities should oversee and regulate monitoring conducted by private entities, ensuring adherence to established standards and protocols. Furthermore, funding for monitoring programs should be integrated into overall MPA management plans. This ensures that resources are allocated systematically to support ongoing monitoring efforts, thereby enhancing the effectiveness of protection measures within MPAs.

## What are the preferences for monitoring methods used in MPA monitoring programs (novel, modern, traditional, cost-effective, QA)?

In MPA monitoring programs, preferences for monitoring methods vary between traditional and innovative approaches, each with their own set of advantages and drawbacks.

### Traditional methods:

**Pros:** These methods are well-established, reliable, and generally cost-effective. They are accessible and often required by reporting standards, providing a clear and common standard based on established criteria.

**Cons:** Traditional methods may be prone to lower reliability due to human error, and they can be costly and time-consuming. Additionally, they may not always be capable of gathering large amounts of data.

### Innovative methods:

**Pros:** Innovative methods offer more precise data collection and can cover larger areas more efficiently. They can be cost-effective, especially once fully developed, such as with zooplankton monitoring. Advanced technologies like AI solutions can significantly enhance data quality and quantity, particularly in bird monitoring.

**Cons:** However, these methods can be challenging to handle and standardize, with limited data storage capacities. Maintaining time series data can also be difficult, and innovative methods are often still in the "pilot" stage. Furthermore, AI and Machine Learning approaches may require manual checking, adding complexity and cost.

While innovative methods offer promising advantages, they can be more expensive to implement, especially at the onset. Yet, as technology improves, costs are becoming more acceptable. However, the adoption of innovative methods may lead to data incomparability between countries. For instance, if some countries have advanced AI systems while others lack the resources, data comparability may be compromised.

In light of these considerations, it is essential to test new methods thoroughly before adoption. While innovative approaches may offer significant benefits, the compatibility and reliability of data across different countries must be ensured.

Striking a balance between traditional and innovative methods can optimize MPA monitoring programs, enhancing data quality and facilitating effective protection efforts.

## Summary of overall input and impressions from the Monitoring workshop

Participants expressed general satisfaction with the event and found the discussions to be insightful. However, limited attendance highlights a potential challenge the project may face in engaging stakeholders in MPA monitoring initiatives.

Throughout the workshop, participants articulated several key themes and recommendations. They emphasized the importance of developing comprehensive monitoring programs that encompass a wide range of parameters, including pressures, biodiversity indicators, and pollution levels. They also stressed the need for tailored monitoring frequencies, continuous data collection, and standardized methodologies to ensure data reliability and comparability across different regions and organizations.

There was consensus that national authorities and environmental agencies should play a central role in overseeing monitoring activities. However, there was also recognition of the value of engaging other stakeholders, including local municipalities, NGOs, and industry, in monitoring efforts. Participants highlighted the potential contribution of citizen science in data collection, as well as the importance of industry and fishermen reporting bycatch incidents.

Overall, participants emphasized the importance of harmonizing data collection efforts, particularly in the Baltic Sea region, to facilitate data exchange and collaboration among neighbouring countries. They underscored the necessity of handling data in a transparent and credible manner, adhering to common methods and guidelines to ensure its relevance and reliability for informing decisions on protection.

Moving forward, the workshop outcomes will inform efforts to enhance MPA monitoring programs, promoting collaboration, innovation, and data accessibility to support effective protection measures in marine ecosystems throughout PROTECT BALTIC.

## Key findings:

## Monitoring is a very important tool for managing MPAs

Effective monitoring is crucial for understanding the health and dynamics of MPAs. By systematically collecting and analyzing data on various parameters, such as biodiversity, pollution levels, and human pressures, monitoring programs provide essential insights into MPA ecosystems.

This information enables informed decision-making, helping managers to assess the

effectiveness of protection measures and adapt management strategies as needed. Furthermore, monitoring fosters accountability and transparency, demonstrating the commitment of stakeholders to safeguarding marine environments for future generations.

## MPA monitoring programs should be aligned with other monitoring happening in the marine environment

Coordination and alignment of MPA monitoring programs with broader marine monitoring initiatives are essential for maximizing efficiency and effectiveness. By integrating MPA monitoring with regional or national marine monitoring frameworks, duplication of efforts can be minimized, and synergies can be leveraged.

This alignment facilitates the exchange of data and information across different spatial scales, enabling comprehensive assessments of marine ecosystem health and trends. Additionally, it enhances collaboration among stakeholders, fostering a unified approach to marine protection and management across diverse geographical regions.

## Data reliability, accessibility and comparability are essential

The reliability, accessibility, and comparability of monitoring data are paramount for informed decision-making and effective management of MPAs. To achieve this, data collection and analysis must adhere to rigorous scientific standards and methodologies, ensuring the accuracy and integrity of the information gathered. Moreover, citizen science initiatives can complement traditional monitoring efforts, enhancing data coverage and engagement with local communities.

Centralized data storage and standardized data handling procedures further promote accessibility and comparability, facilitating data sharing and synthesis across different monitoring programs. By upholding these principles, MPA managers can generate high-quality, actionable data that informs protection priorities and supports evidence-based management decisions in marine environments.

## Ecological coherence



*Image 24: The workshop discussed four topics: relevance of criteria within ecological coherence assessment, aligning national and regional assessments, consideration of strictness of protection and objectives of spatial prioritization.*

## Overview

The in-person workshop was facilitated by the PROTECT BALTIC Project Coordinator *Cecilia Nyman* and *Petra Kääriä* from the HELCOM Secretariat, while *Ulf Bergström*, *Edmond Sacre* and *Claire Ract* from the Swedish University of Agricultural Sciences (SLU) ran the online workshop.

The focus of the session was on ecological coherence and spatial prioritization of networks of marine protected areas.

Ecological coherence is a complex concept, but Catchpole (2013) provides an excellent definition that may be used as guidance:

> "In the context of the Natura Directives, an ecologically coherent network consists of sites designated for the protection of relevant habitats and/or species. It should support habitats and populations of species in favourable conservation status across the whole of their natural range (including the wider countryside and marine areas beyond Natura 2000 sites); and contribute significantly to the biological diversity of the biogeographic region. At the scale of the whole network, coherence is achieved when: the full range of variation in valued features is

represented; replication of specific features occurs at different sites over a wide geographic area; dispersal, migration and genetic exchange of individuals is possible between relevant sites; all critical areas for rare, highly threatened and endemic species are included; and the network is resilient to disturbance or damage caused by natural and anthropogenic factors."

Two previous assessments of the ecological coherence of the network of MPAs in the Baltic Sea have been performed by HELCOM: one in 2010 and another in 2016. In those previous assessments, four criteria for ecological coherence were used:

1. **Representation** – the proportion of a species or feature of an ecosystem that is protected.
2. **Connectivity** – the ability of organisms to disperse between MPAs and other suitable areas.
3. **Replication** – the number of each feature being protected.
4. **Adequacy** – defined as the size, shape and location of MPAs to ensure the persistence of features over time.

Within Work Package 5 of PROTECT BALTIC, a new assessment of ecological coherence will be performed, followed by a spatial prioritization to identify candidate areas for the expansion of the MPA network, particularly regarding strict protection.

The EU Biodiversity Strategy has agreed that by 2030, 10% of EU seas should be strictly protected, however, less than 1% is currently under strict protection in the Baltic Sea.

## Methodology

The workshop was divided into four discussion topics:

(1) the relevance or importance of criteria within the ecological coherence assessment;
(2) aligning national and regional assessments and prioritizations;
(3) consideration of strictness of protection; and
(4) objectives of the spatial prioritization.

For the online workshop, an online Slido poll was conducted for the facilitators to get to know the participants and their familiarity with the concepts of ecological coherence and spatial prioritization.

The group was divided into two rooms (approximately 9 participants per group) and each discussed the four topics displayed in a Miro board. The participants had 30 minutes to use post-it notes and write down their ideas (the notes were colour-coded to distinguish between the suggestions made by representatives for research, governments, industry, and NGOs).

Next, there was 25 minutes of full group discussion on the key questions. Here, participants voted on the most important suggested ideas and discussed the notes that received the most votes. Finally, there was a 15-minute wrap-up session including both physical and

online participants, in which the most important points raised by both groups were presented.

For the in-person workshop, the whole group discussed the four topics. The participants had 30 minutes to use post-it notes and write down their ideas on "physical boards". There were then 25 minutes of full group discussion on the key questions (voted previously by the participants). Finally, there was a 15-minute wrap-up session, as described earlier.

## What criteria should be used to assess the ecological coherence of the MPA network?

One of the criteria discussed online and judged important to consider in the ecological coherence assessment was ecological connectivity (identifying migrating species was mentioned). In addition, an assessment at the species level was considered by including threatened and rare species in the assessment or considering the degree of protection according to Red Listed species.

The addition of potential criteria in the assessment was also discussed, and ecosystem services and management effectiveness were chosen as important criteria to consider both by the online and in-person participants. Some of the online participants mentioned the importance of considering the existent criteria in the assessment to be able to follow the progress. The in-person participants mentioned that a geological assessment of the diversity present in the sea could be incorporated.
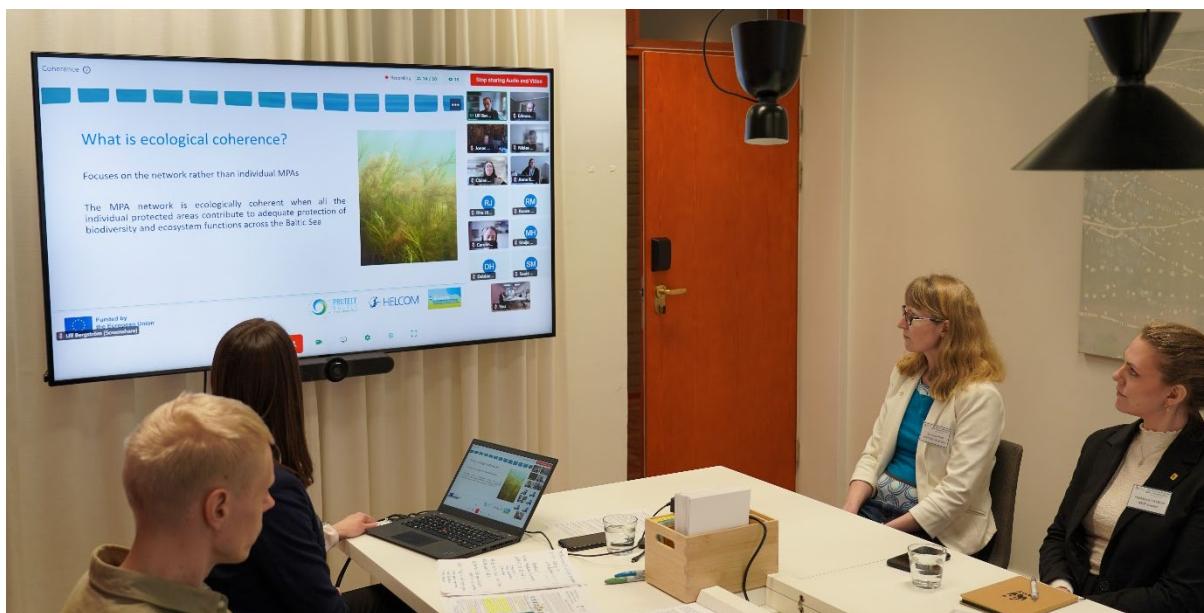


*Image 25: Both workshops were able to engage with each other during the event, and participants agreed that ecosystem services and management effectiveness were important criteria to consider.*

## How should regional assessments align with national assessments?

Most of the online participants agreed that a regional transboundary assessment would be useful for national analyses, allowing to span beyond countries borders.

Both the online and in-person participants agreed that aligning regional and national assessments was necessary especially in relation to strict protection. To do that,

communication and collaboration between stakeholders would be important. In addition, the methods and criteria used will need to be the same.

Some participants mentioned the idea of considering "model-species" in the assessment, focusing on the level of dispersal ability or other life-history traits across the whole Baltic.

## How should strictness of protection be incorporated into the assessment and prioritization?

The participants pointed out that there is still not a clear definition of what strict protection is, although there seems to be an agreement that it should entail a full closure, or at least very strict regulation, of fisheries.

Participants agreed that it might be better to start by defining what strict protection is, before including it in the assessment. The strict protection measures to put in place would be up to the member states to make their own definition. The same challenge goes for OECMs.

Some of the participants mentioned that the IUCN categories could be used to assess the protection strictness.



*Figure 41: Miro was used to submit responses to the topical questions. Post-it notes were colour coordinated based on the sector participants represented.*

## What should the objectives of the spatial prioritization be so that it is relevant for stakeholders (species, connectivity, etc.)?

The in-person participants agreed that the 30x30 target and the 10 % strict protection should be prioritized. OECMs would not be part of this goal at this stage, as their definition and implementation are still uncertain. The primary focus should be set on reaching goals right now rather than defining OECMs.

The online participants mentioned that the spatial prioritization will have to define targets separately for the different basins of the Baltic Sea. The reason for that is to get a good representation of species or habitat areas across the Baltic Sea. The in-person participants mentioned that the prioritization should focus on an integrated view with multiple species/habitats and ecological functions involved.

The objectives of the spatial prioritization will depend on the stakeholders involved: the participants suggested that socio-economic based objectives (relating, for example, to fisheries, fish farms or wind farms) will be interesting for politicians and protection-based objectives would be more relevant for research, NGOs, etc.

Some of the stakeholders most likely to be influenced by the spatial prioritization plan would be fishers, the tourism industry (which has increased in the last few years), the renewables sector and the extractive industries. In addition, the participants noted that local inhabitants will probably have the most difficulties to be involved in the spatial plans.

## Summary of overall input and impressions from the Coherence workshop

Different points of view emerged regarding the addition of potential criteria to the ecological coherence assessment. However, participants agreed that ecological connectivity and representation were central criteria for the future development of the MPA network within the Baltic Sea.

To align objectives at different scales, a regional transboundary assessment was proposed. To do this, a high level of communication and cooperation will be required between the stakeholders involved.

The inclusion of 10% of strict protection in the MPA-network within the Baltic Sea is fundamental. However, no definition of what strict protection is currently exists, but the participants agreed that a definition could be decided by the member states. As OECMs are not clearly defined yet, they should not be part of the assessment.

The spatial prioritization analysis, which will be performed after the ecological coherence assessment, should be completed using separate targets for the different basins of the Baltic Sea, to allow specific protection for certain species and habitats. Fishers, the renewable and tourism sectors, and the extractive industries would be the stakeholders most affected and influenced by the spatial plan.
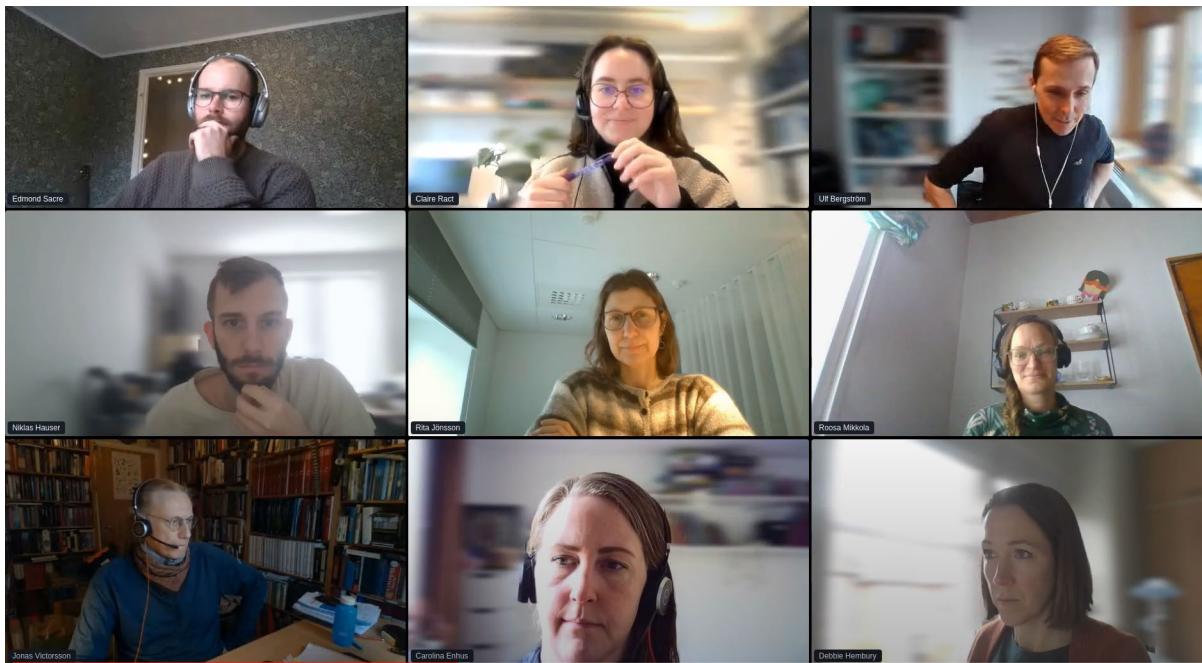
*Image 26: Ulf Bergström, Edmond Sacre and Claire Ract from the Swedish University of Agricultural Sciences (SLU) hosted the online workshop together.*

## Key findings:

### Ecological connectivity is key

Ecological connectivity is a central criterion for the development of the MPA network, that is, to plan the network in a way that allows efficient dispersal of organisms between areas. Connectivity will be integrated in the ecological assessment of the network of MPAs within the Baltic Sea. Furthermore, some connectivity models will be developed beforehand in Work Package 5, along with the development of connectivity maps, which would be useful both for national and local authorities.

Different forms of connectivity exist and could be considered in the analyses: such as active or passive dispersal, patch, habitat or population connectivity or additional specific forms of connectivity (e.g. local/regional connectivity, ecosystem-specific connectivity, species connectivity, etc.). There is a clear need for help from researchers on this topic as these analyses are highly specialized.

### Baltic-wide assessment is important for guiding national work

Even though many countries are doing their own national assessments of the MPA network, a Baltic-wide assessment of ecological coherence is important for guiding the national work on MPAs, to ensure a coherent network across the region. Therefore, assessments of certain criteria will be performed at the scale of the Baltic Sea such as connectivity which will be useful for stakeholders and for spatial prioritization, which is part of this work package.

To perform this assessment across the different countries, a high level of collaboration and communication will be required between the different stakeholders. Challenges will be expected across countries such as sharing confidential data.

## Strict protection objective is crucial

It is central to work on the 10% strict protection objective for the future work on MPAs in the Baltic. There is no official definition of strict protection today, but there are very few strictly protected areas so far in the Baltic, as fisheries are allowed within most MPAs.

Including strictly protected areas will be very important for improving the status of the biodiversity in the Baltic Sea.
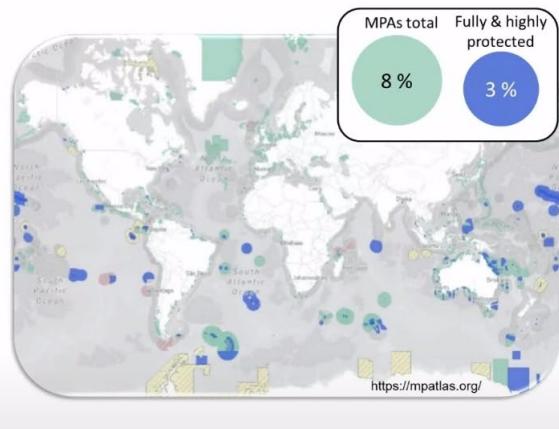


*Figure 42: Levels of strict protection were discussed during the workshop, with less than 0.1% fully and highly protected areas currently in European waters, strict protection is seen as crucial to ensure benefits for biodiversity.*

## MPA Europe Baltic Sea Regional Stakeholder Workshop



*Image 27: Belinda Bramley and Thanos Smanis kick-off MPA Europe's Baltic Sea Regional Stakeholder workshop during the event.*

### Overview

The in-person event was led by *Mark Costello* (Project Leader), *Belinda Bramley* and *Thanos Smanis* (both involved in MPA Europe's WP6 Stakeholder engagement). Running the online session were *Anna Addamo* (MPA Europe's WP5 Prioritisation Analysis), *Silas Principe* (MPA Europe's WP2 Species Distribution Modelling) and *Anna Urgeghe* (MPA Europe's WP6 Stakeholder engagement).

MPA Europe plays an active role in integrating scientific knowledge into marine spatial planning efforts, with a focus on fostering effective and sustainable management strategies for marine ecosystems throughout Europe. Being closely aligned with PROTECT BALTIC, which shares a similar stakeholder network in the Baltic Sea region, both projects have recognized the value of collaboration to maximize synergies.

As part of this collaboration, MPA Europe organized a dedicated workshop during the Baltic Stakeholder Conference, specifically tailored to the Baltic Sea region. During this workshop, MPA Europe presented their project's approach and their results to date, and discussed with stakeholders how these can support science-based designation of networks of marine protected areas (MPAs) and marine spatial planning (MSP).

## Methodology

For both the online and in-person workshops, MPA Europe gave a PowerPoint presentation of their goals, scientific approaches, and results to date (around 20-25 minutes). They then invited stakeholders to ask questions during and after the presentation.

Stakeholders were then asked to consider the following questions and to write down their thoughts on post-it notes:

1. How can MPA Europe's results support science-based marine spatial planning (MSP) at national, transboundary or regional levels?
2. How can MPA Europe's results support the strengthening of existing MPAs?
3. How can MPA Europe's results support extending the network of MPAs in the region?

Stakeholders were also asked to propose possible use cases for the project's results.

For the in-person workshop, participants were asked to place their post-it note comments on four flipchart sheets – one for each of the three questions plus one for case studies.

Each question and the case studies were then discussed for around 15-20 minutes, by reading out the comments shared and discussing them among the whole group.

For the online workshop, stakeholders were invited to share their views and comments for each of the questions.

## Use of data layers and tools used for extending network of MPAs, either at national, transboundary or regional level.

A key consideration for MPA Europe is how to integrate productively with PROTECT BALTIC and existing initiatives both nationally and regionally. MPA Europe were asked if they could set out a clear methodology on how to address the coherence of MPA networks on a regional scale. For example, connectivity is already being integrated into prioritization of new MPAs. So, how do MPA Europe's connectivity analyses compare with those being used?

Their methodologies are elucidated for their results to date and will be explained in more detail in forthcoming open access papers. MPA Europe is also happy to discuss these methodologies in more detail with stakeholders, as required.

They are seeking opportunities to synergize with existing efforts towards marine protection and adaptive MSP and are keen to see how their atlas and results based on European and global marine biodiversity datasets compare with the results of PROTECT BALTIC in due course.

PROTECT BALTIC is using richer, more refined local data and a comparison of respective species distribution models will be a good test of the quality of the MPA Europe modelling approach.

MPA Europe note that their approach could be improved by the inclusion of absence and abundance data. Both projects will use some form of prioritization software (e.g. Zonation, Marxan or PrioritizR) to score areas for biodiversity richness and this presents another opportunity where the two projects can share lessons and refine approaches. Comparing the two projects' approaches to coherence will also be beneficial.

Both projects will gain by reviewing the level of consistency between respective results and describing how they interrelate.

MPA Europe were asked if they have considered geodiversity and abiotic values since the Baltic Sea has unique geological formations which influence patterns of biodiversity. The facilitators confirmed that MPA Europe is only considering marine environmental data, but that they think this would be a great research topic to explore further.

Questions were also asked about seasonal dynamics. MPA Europe confirmed that they consider long-term climatology in their data modelling approach, rather than shorter-term factors influencing species.

## Use of data layers and tools used for extending network of MPAs, either at national, transboundary or regional level.

A potential use of MPA Europe's results is to integrate the network of existing MPAs for the Baltic Sea within their prioritization process.

MPA Europe results can benefit countries that have yet to pledge new MPAs, but also those that have already reached 30%. For example, Latvia has protected 15% of its marine environment so far, and MPA Europe's results could be used to help identify new areas. Germany has already reached 30% and MPA Europe's results could be useful to update or modify MPAs and/or MSP in future.

Blue Carbon results could be used as an additional criterion to identify new protected areas. This criterion could complement other criteria used while simultaneously contributing to climate-related targets. Adding a Habitat and Birds Directives/Natura 2000 information layer to MPA Europe maps could also prove to be useful.

Stakeholders suggested that MPA Europe could consider how to incorporate data on Important Bird Areas (IBAs), Important Marine Mammal Areas (IMMAs), Important Shark and Ray Areas (ISRAs), and other Conservation of Migratory Species datasets for a fuller representation of key biodiversity areas in the MPA network design.

One participant commented that the urgent need for marine protection is not as widely recognised as the need to address climate change. Understanding why coherent networks of MPAs are needed should be shared with the general public and the private sector. MPA Europe's analysis can help companies move towards sustainability, optimizing the selection of areas where activities could be developed with minimal impacts on marine life.

## Use of data layers and tools used for strengthening network of MPAs, either at national, transboundary or regional level.

Stakeholders noted that the blue carbon database provides added value, including for existing MPAs, providing an opportunity to communicate the role of protected areas in meeting climate goals and integrate this with relevant national/EU policies.

It was suggested for MPA Europe to compare results with national and regional data on MPAs, since MPA Europe may provide new data or insights for existing MPAs, and/or generate new research questions.

Stakeholders noted that good spatial maps such as species distribution models can support stakeholder consultations when justifying new MPA boundaries. MPA Europe's species models will be made freely available online, e.g. via the Ocean Biodiversity Information System (OBIS).

It was noted that MPA Europe's results can support and improve the management of legally designed MPAs, by providing data and information which can be used to improve and update protected area management plans.

An industry stakeholder suggested that ships can be re-routed to avoid forthcoming MPAs or key biodiversity areas, but this information needs to be known well in advance, for effective itinerary planning. This point emphasises the important role MSP can play in bringing different sectoral stakeholders together.

## Use of data layers and tools within MSP, either at national, transboundary or regional level.

Marine management and regulation are siloed in Europe. Projects like MPA Europe can increase interchanges between MPA and MSP policy and decision makers. MPA Europe results can assist transboundary/regional MSP, but at 5km resolution could be too coarse for national planning. However marine spatial planners need to switch between different plan scales, since national planning (including of MPAs) informs regional planning, which informs Europe-wide planning, and vice versa.

MSP uses data that reflects the current state of marine biodiversity, but both MSP and the identification of future MPAs need to consider the likely effects of climate change on the ranges of species. Connectivity of MPAs also needs to be respected in MSP. MPA Europe's models can provide insights and prioritise climate refugia in optimal MPA network design, to help future-proof MSP. It is important to keep the models created by MPA Europe updated for MSP and future MPAs, as conditions change.

Blue carbon mapping will be particularly useful for MSP. Including blue carbon habitats beyond seagrass and saltmarsh (e.g. muddy sediments) adds value for MSP. Seagrass and saltmarsh areas are already protected in the North Sea, for example, by Germany, but it helps to know more about other blue carbon stores.

Improved ecological data and criteria are crucial but socio-economic criteria are also needed for MSP. This is being developed by another sister project of MPA Europe and PROTECT BALTIC: MSP4BIO. Therefore, synergies are important.

MPA Europe is collaborating with sister initiatives and is open to working on joint case studies with any stakeholders, including sister projects.

## Were any use cases co-identified based on the project's results?
Several use cases were suggested including:

- Comparing MPA Europe's prioritisation in Finland with results of Finnish Velmu programme, an inventory for underwater marine biodiversity.
- Comparing MPA Europe's prioritization for Åland with the LIFE Biodiversea project.
- Comparing MPA Europe's results with HOLAS 3 aggregated Green Infrastructure/ecosystem services maps for the whole of the Baltic Sea.
- Comparing MPA Europe's results with cumulative impact maps, e.g. HOLAS 3 Spatial Pressure and Impact Assessment (SPIA) results.
- Different modelled scenarios for new MPAs can support national discussions with policymakers. For example, modelling for Birds and Habitats Directives species, or broader groups, along with blue carbon maps.
- Test stakeholder sentiment on marine protection versus decarbonisation. For example, conduct a survey or study with business and civil society.
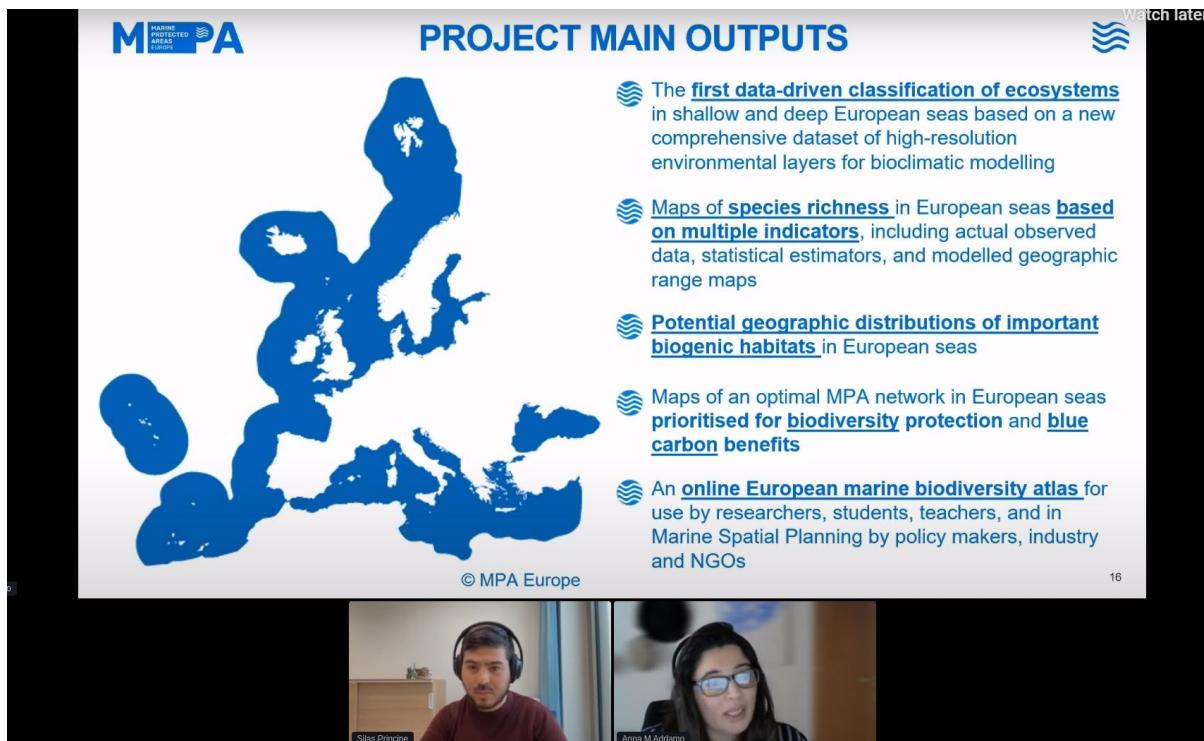


*Image 28: Anna Addamo and Silas Principe presents MPA Europe's main outputs during the online session of their regional stakeholder workshop.*

## Summary of overall input and impressions from MPA Europe's workshop

Overall, stakeholders engaged actively during the workshops and could see the benefits of MPA Europe's scientific approach and results. There is enthusiasm to use the data and maps created by MPA Europe in a variety of ways, both for MSP and for strengthening existing MPAs or supporting the identification of new MPAs, including engaging national stakeholders.

Stakeholders also proposed several ideas for a range of possible co-designed case studies, based on existing programmes and initiatives in the Baltic Sea region.

MPA Europe is seen as adding value both in providing new data and insights for future-proofing MPA designations and climate-smart MSP, and together with its sister projects in fostering dialogue between national authorities with different mandates (MPAs and MSP), which sometimes operate in silos.

Due to their use of regional/global datasets and standardized data layers for modelling, there is a need for further dialogue with stakeholders on how to integrate MPA Europe's results to support national and regional efforts towards coherent MPA networks, which draw upon national and local data and include human impacts.
Stakeholders also proposed that MPA Europe's results could be enhanced by including Important Bird and Marine Mammal Areas, for example, and mentioned the need to keep the information updated as conditions change.

Their blue carbon datasets provide new information to factor into MSP and strengthen the arguments for MPAs and can support national authorities to articulate the role of marine protected areas and seabed protection in providing climate mitigation benefits.

Most stakeholders in the workshops had scientific backgrounds and could therefore readily see the benefits of the work. They were also joined by a stakeholder from the business community who drew attention to the fact that marine protection is not viewed with the same urgency as decarbonisation by the general public and the business community.

This was a helpful reminder to amplify and promote the key messages on the need for coherent MPA networks within science-based MSP, and the benefits these can provide for biodiversity and climate change mitigation.

## Key findings:

## Enhancing interactions between MPA and MSP policymakers

A lesson from the stakeholder workshops is that marine management and regulation is often siloed in Europe resulting in mitigation against effective marine protection. Projects like MPA Europe can increase interchanges between MPA and MSP policy and decision makers. Stakeholder engagement across disciplines, sectors and levels is important to share knowledge and find common ground for developing solutions.

Good spatial maps such as species distribution models can support stakeholder consultations, when justifying new MPA boundaries, and support countries to update their marine spatial plans.

## Scale considerations in MSP

Marine spatial planners need to switch between different plan scales, since national planning informs regional planning, which in turn informs European-wide planning, and vice versa. MPA Europe's focus is all European Seas, i.e. the Atlantic Exclusive Economic Zones of the EU and its neighbours, and the Mediterranean, Baltic, and Black seas – see Figure 43.

So, MPA Europe is also able to stimulate a discussion among different stakeholder groups about the relative efficiencies of planning climate resilient networks of MPAs at European scale, regional sea scale or national scales.

*Figure 43: MPA Europe study area.*

## Methodological elaboration and integration with existing initiatives

Stakeholders also asked MPA Europe to elaborate on their methodologies, so that they can be integrated productively with existing initiatives nationally and regionally.

PROTECT BALTIC and other regional and national initiatives are using richer, more refined national or local data whereas MPA Europe's approach is based on standardised layers using European and global data repositories.

## Comparison and evaluation of modelling approaches

Comparison of MPA Europe's species distribution models with those created by PROTECT BALTIC and other programmes will be a good test of the quality of MPA Europe's modelling approach and may yield further insights. MPA Europe's approach could be improved by the inclusion of absence and abundance data, and important areas for key species groups such as seabirds or mammals.

## Utilizing prioritization software for biodiversity assessment

Both PROTECT BALTIC and MPA Europe will use some form of prioritization software (e.g. Zonation, Marxan or PrioritizR) to score areas for biodiversity richness and this presents another opportunity to share lessons and refine approaches. A comparison of the approaches used for coherence will also be beneficial.

## Consistency and interrelation of results between projects

Both projects would gain from reviewing the level of consistency between their respective results and describing how they interrelate. Similarly, a comparison or overlay of data layers and maps with some of HELCOM's assessments (e.g. cumulative impacts or ecosystem

services) and with national modelling efforts, for example in Finland and Latvia, would also be valuable.

## Engagement with business sector and public perception

Finally, the business sector needs to be considered and an understanding of public perception on protecting biodiversity versus decarbonisation. This was an important reminder that there is big effort required on ocean literacy to engage wider audiences in support of marine protected areas and the benefits they bring, not only for biodiversity and climate mitigation but also in socio-economic terms.

MPA Europe's analysis can help companies move toward sustainability, optimizing selection of areas where activities can be developed with minimal impacts on marine life. It is possible for shipping to avoid important areas for biodiversity, but this information needs to be known well in advance, for effective itinerary planning. This point emphasises the role MSP can play in bringing different sectoral stakeholders together.

# Youth Event



*Image 29: The youth event was set up alongside the main stakeholder conference to provide a platform for young voices to share their perspectives on the future of the Baltic Sea.*

## Overview

The youth event was facilitated by the external moderator for the event, *Rogier Elshout*, with support for questions related to PROTECT BALTIC provided by *Paul Trouth* (WP9 lead for Communications and Outreach and WP10 lead for Sustainability).

The event was set up alongside the main conference to provide a platform for young voices to share their perspectives on biodiversity, marine protection, and how they value their relationship with nature. PROTECT BALTIC strives to safeguard the Baltic Sea's delicate ecosystem and to create products that are sustainable, replicable, adaptable, and long-lasting beyond the conclusion of the project, getting youth input and insights at this early stage of the project is invaluable to the project goals. It is hoped that an advocacy group of interest youth could be developed who would want to be involved directly with the project.

## Methodology

The youth participants joined a video dialogue with Rogier and representatives of the PROTECT BALTIC project. Rogier then steered them through a series of questions using the visual work platform Mural, which helps teams work better together by providing a shared space, templates, and AI integration to formulate their ideas in a visual and creative way. The youth event was carried out fully online, but out of respect for the youth participants' wishes, the recording has not been published or shared on social media.

## What was the motivation for joining the event?

The youth participants each exhibited a strong dedication to protecting nature, with many of those who joined actively involved to some degree in the field. Their motivations for joining the event were multi-faceted. Firstly, there was a prevailing belief in the necessity of preserving ecosystems, particularly the Baltic Sea, which was seen as crucial for present and future generations. One participant expressed that they would want their children and their children's children to be able to fish in the Baltic Sea and they held a fear that without action this would not be possible.

Additionally, there was a resounding call for the inclusion of young people in policy-making processes concerning environmental issues. Some participants expressed a desire to be kept informed, indicating a proactive approach to understanding and addressing marine protection challenges.

Their specific interests in biology, the Baltic Sea's future, and projects aimed at marine protection were evident. They also emphasised the importance of amplifying youth voices in environmental discourse and expressed curiosity about the PROTECT BALTIC project and how they might want to be involved.

Overall, their motivations reflected a commitment to environmental stewardship, a desire for knowledge, and a recognition of the significance of involving youth in shaping environmental policies and actions.

## What were the goals of the participants for the day?

The participants' goals for the day encompassed a variety of educational, inspirational, and action-oriented objectives. Firstly, there was a collective aim to deepen understanding about the Baltic Sea, including its ecological significance and the challenges it faces.

The youth participants expressed a desire to learn about how the project plans to engage them and like-minded youth in PROTECT BALTIC, political processes relevant to safeguarding marine environments, and action plans for protecting the Baltic Sea under the project. Their desire to learn more also saw several of the youth participants joining online for the main conference workshop sessions on Governance and Restoration.

Feedback from the participants on those workshops was that it was very positive to be able to network with those who are well established within the field, as well as newcomers. But it did also highlight to them that the project is in the formative stage of what the PROTECT BALTIC project will actually entail. There is a hope that being included in this early stage could be an opportunity for the youth participants to help shape parts of the project.

Additionally, there was an aspiration to gather information and ideas for future campaigns and projects on topics that mattered to them. Some sought inspiration, while others aimed to connect with youth from different countries to explore sustainable management of marine resources collaboratively.

## Where were the participants from?

In total, six youth participants joined the event. Three were from Sweden, two from Germany and one from Finland. The modest size of the group did not diminish the significance of their presence or contributions. Instead, it fostered a more intimate and collaborative environment where each of their voices could be heard and appreciated. Their collective knowledge and enthusiasm illuminated the discussions.

## Why is protecting the Baltic Sea important to the participant?

The participants outlined the Baltic Sea's significance to them. Firstly, there is a critical need to preserve biodiversity within its ecosystems, acknowledging the diverse array of marine species and habitats reliant on its health. Additionally, the youth participants stressed the importance of safeguarding ecosystem services, such as climate regulation through carbon sequestration and maintaining water quality, vital for both marine life and human well-being.

Furthermore, preserving the Baltic Sea's services to humans was seen as essential. Their comments included ensuring the sustainability of the fishing industry for future generations, leveraging the sea's capacity as a carbon sink to mitigate climate change, and safeguarding human health by preventing the spread of toxins and diseases.

Economic considerations were also mentioned as significant, with references to the pivotal roles of fishing and agriculture industries, alongside broader economic benefits linked to a healthy Baltic Sea.

They also mentioned the role the sea plays in fostering connections to heritage, traditions, and community identity. The sea's preservation was seen not only as an ecological imperative but also as fundamental to cultural heritage and social cohesion.

Overall, the responses conveyed a holistic understanding of the Baltic Sea's importance, integrating ecological, economic, cultural, and societal dimensions, and underscoring the interdependence between human well-being and the health of marine ecosystems.

## How optimistic were participants that the Baltic Sea can be protected?

Despite harbouring pessimism regarding the current state of affairs and decision-making processes, the youth participants overall expressed a glimmer of hope that a turning point in Baltic Sea protection efforts could be achieved.

Only four of the six participants responded on this point, with the majority (three out of four) conveying slight levels of optimism that it is still possible to protect the sea.

Conversely, one participant held a slightly less hopeful outlook, possibly influenced by a perception of entrenched challenges or a lack of progress witnessed in addressing environmental issues.

Their nuanced perspectives reflected a blend of realism and optimism, acknowledging the challenges and shortcomings in current decision-making processes, but also exhibiting a determination to pursue avenues for improvement.

## Are young people listened to and taken seriously in decisions?

The participants expressed a general frustration at young people's exclusion from decision-making, feeling their voices are often dismissed or used merely for optics rather than genuine engagement. Additionally, several participants felt somewhat irked by their marginalization within the conference, which hindered their sense of agency and contribution.

To foster better relationships with the youth participants, genuine engagement is desired that goes beyond tokenism. This necessitates active listening and integrating their perspectives into decision-making processes. Bridging the gap between youth and decision-makers is vital; their views should be integrated into core discussions as a key stakeholder group rather than sidelined.

This was not handled in a desirable way by participants during this event, and sustained efforts are needed to nurture trust, foster ongoing dialogue and create inclusive spaces for their voices to be heard during the project. In this regard, the project should look to establish more regular communication channels with such youth advocates so that their unique perspectives can help to shape a better future for the Baltic Sea.



*Image 30: The event moderator Rogier Elshout from moderating.eu works alongside youth representatives using AI tools to help depict their nightmare visions for the future of the Baltic that must be avoided.*

## What would the participants like to contribute to HELCOM's work under the project?

The participants expressed that they were unclear on the project's scope and the opportunities that would be available to contribute, and this led to uncertainty about the levels of involvement they would want to have.

Some participants exhibited caution as they have competing priorities and limited time, which makes it even more crucial for us to be clear on the benefits, constraints, and levels of participation needed before they would be willing to commit.

However, from further discussions, several potential avenues for contribution emerged:

- Facilitating connections with youth and youth organizations to broaden participation.
- Assisting in the development of outreach materials to engage and educate young people about Baltic Sea protection.
- Providing expertise, perspectives, and energy to internal stakeholders, fostering urgency and commitment to the project.
- Engaging with policy makers at ministerial and at European Commission levels to advocate for meaningful action and policy changes – and not just optics.

Regarding specific contributions, participants highlighted that they would be interested in the following if support and funding were provided under the project:

- Networking with youth organizations dedicated to Baltic Sea protection.
- Establishing stakeholder networks and youth delegations at ministerial levels.
- Arranging meetings with stakeholders and EU politicians to advocate for the project's objectives.
- Organizing field excursions, such as during youth camps, to enhance understanding and engagement.
- Involving high schools and universities in citizen science initiatives to promote active participation.
- Utilizing personal knowledge to bridge connections and engage with young people effectively.
- Developing educational materials to raise awareness and promote understanding among various age groups.
- Conducting research on key subjects to provide informed insights for driving change.

Overall, while participants expressed willingness to contribute, clarity on the project's specifics and alignment with their interests and capacities were identified as crucial factors that would influence their levels of engagement.

## When is PROTECT BALTIC seen as a success by participants?

The youth participants outlined various criteria for considering PROTECT BALTIC a success or failure, reflecting the diverse expectations and desired outcomes:

## Success factors

- Effective protection of most species, either through strict measures or alternative methods.
- Implementation of improved fishing structures and policies, such as reduced fishing quotas.
- Establishment of stable collaboration frameworks across countries, ensuring sustained efforts over time.
- Increased participation of young people, allowing them to engage with and experience the Baltic Sea.
- Achievement of set goals, particularly in establishing monitoring mechanisms to track the impact of interventions.
- Enhanced efforts in ammunition recovery to mitigate pollution.
- Reintroduction of native species, following thorough research, to address eutrophication.
- Creation of youth networks to foster collaboration and engagement.
- Tangible progress in achieving set goals, leading to the resurgence of collapsed fish populations.
- Clear legal protections for high-value species and increased funding for restoration-focused research.
- Reduction in eutrophication levels, indicating improved marine health.

## Failure factors

- Unequal involvement of stakeholders, leading to a lack of consensus and ineffective decision-making.
- Stagnation or lack of progress, with no noticeable changes in the state of the Baltic Sea.
- Unclear purpose and direction, resulting in disjointed efforts and a sense of aimlessness.
- Continuation of harmful practices such as excessive industry trawling, exacerbating ecological degradation.
- Persistence of issues such as herring collapses, indicating failure to address underlying problems.

Overall, the youth participants emphasized the importance of collaborative, targeted efforts for achieving tangible improvements in Baltic Sea health. Success was defined by concrete outcomes such as species protection, policy improvements, and enhanced collaboration, while failure was associated with stagnation, lack of consensus, and continued degradation of marine ecosystems.

## What is your nightmare vision for the Baltic Sea?
Participants were asked to use an AI visualization tool within the Mural work platform to depict their nightmare visions for the Baltic Sea.

## 1. Collapsed ecosystems:



*Image 31: Eutrophication leading to excessive algae growth, rendering swimming impossible. Extinction of animal and fish species due to deteriorating water quality and overwhelming pollution contributing to ecosystem collapse.*

## 2. Loss of marine life:



*Image 32: Expanded death zones with depleted oxygen levels resulting in mass marine life mortality. Near-extinction or complete loss of key species, disrupting the food chain. Increased risk of old ammunition exploding. Acidification of the sea, further periling marine organism survival and severe depletion of fish stocks, impacting ecosystems and communities.*

### 3. A plastic Baltic Sea:



*Image 33: Accumulation of plastic debris contaminating marine environments. Consumption of plastic-contaminated food, posing health risks to humans, and pervasive pollution from plastic bottles and inadequate waste management practices.*

These nightmare scenarios vividly illustrate the youth participants' views, emphasizing their belief in the urgent need for comprehensive protection measures to protect the Baltic Sea from irreversible damage.

## What is your ideal picture of the Baltic Sea?

The youth participants were then asked to use an AI visualization tool within the Mural work platform to envision their ideal visions for the Baltic Sea.

### 1.  Healthy sea and ecosystem:



*Image 34: Implementation of measures such as fishways and protected eel maturation habitats. Mitigation of farming runoff using grasses, wetlands, and healthy soil drainage. Solutions to protect threatened species like eel and cod, including renaturation efforts. A thriving ecosystem across trophic levels, with reduced occurrences of harmful algal blooms (HABs). Stable populations of key species such as herring and cod, supporting healthy spawning rates. Preservation of habitats for large predators like porpoises, seals, and sea eagles. Regulation of trawling activities, both within and outside Marine Protected Areas (MPAs), to ensure sustainable resource use. Implementation of solutions to reduce fish mortality from hydropower and promote seagrass afforestation.*

## 2. A healthy sea for future generations:



Image 35: Reduction in algal blooms, enabling safe swimming conditions. Increased accessibility to the sea for people of all socioeconomic backgrounds. Support for small-scale fishers to earn a livelihood. Elimination of ammunition pollution from the sea.

## 3. Democratic, inclusive, and effective policymaking:



Image 36: Democratic control and cooperation between governments, corporations, organizations, and individuals. Open communication channels facilitating inclusive decision-making processes. Collaborative efforts to ensure policies are effective, inclusive, and responsive to the needs of all stakeholders.

These visions highlight the youth participants' aspirations for a Baltic Sea characterized by environmental health, social equity, and transparent governance, reflecting a shared commitment to sustainable management, and protection.

## Young Voices for the Baltic Sea

A representative from the Marine Education Centre in Malmö, Sweden presented an upcoming "Young Voices for the Baltic Sea" aimed at 18–25-year-olds. A digital kick-off meeting will take place in June 2024, followed by an in-person workshop in Malmö in September 2024, and further meetings throughout 2025 ahead of the UN Ocean Conference in Nice, France in summer 2025. Their hope is to be able to send a delegation to this conference. More information on this can be found at:
https://skansen.se/se-och-gora/djurpark/baltic-sea-science-center/ungas-rost-for-ostersjon/
(scroll down on the web page for information in English).

## Summary of overall input and impressions from the Youth Event:

Despite significant efforts to recruit participants for the youth workshop, only six individuals were secured despite 25 registering to attend.

However, the modest size of the group belied its remarkable capabilities in terms of experience, drive and motivation. With a mix of newcomers and individuals with formal involvement in youth organizations that operate within environmental fields, the participants represented a varied spectrum within the youth demographic.

The event showcased a dynamic atmosphere characterized by mutual respect and cooperation, leading to valuable contributions from all participants during discussions. While these young individuals have massive potential to significantly enhance the project – particularly in terms of advocating for tangible change – realizing this potential requires a clear direction, mandate, and support from the project.

To engage them further, it is essential that the group is provided with well-defined and clear objectives, and crucially adequate resources. The commitment of their time and effort must be balanced with tangible benefits that justify their involvement. And they want to be involved.

But they are also wary of their inclusion just being tokenism. They don't want to just be heard and shown in some form of "youth washing" exercise. As their perspectives matter, the youth want to be part of the project events, and to be present in the room with the other stakeholders so that they can discuss in-person with experts and those making decisions.

## Key findings:

### Online meetings

It was observed that online meetings primarily attracted individuals with strong commitment and dedication to the cause. However, it was also implied that limiting their participation to the online platform was detrimental as it limited their ability to engage fully in the other sessions and with other participants.

### Believe in the power of young people

The youth participants were motivated and eager to make a difference. Their networks are vast, and if engaged properly, they would be ready to spread important messages from the project. Despite their age, it was clear that the participants all have valuable knowledge and unique insights to offer. Their sense of urgency and ability to challenge conventional thinking should be seen as a key strength that could significantly benefit the project.

### Youth camp idea

A suggestion was made to potentially organize a multiday youth camp, ideally located near the sea, allowing participants to immerse themselves more deeply in the topic. This format would be advantageous at a stage where the desired contributions of participants has become more tangible.

### Leveraging their diversity

Their varied backgrounds and perspectives enhanced the richness of discussions and contributed to more holistic problem-solving approaches.

### A need for marine education to improve in schools

There was a perception that many youths are lacking an understanding of the problems being faced by marine environments and that educational programmes should be enhanced in the school system. Often biology classes are centred on terrestrial environments (i.e. visits to forests, but rarely to the sea).

Three Mission Ocean projects, SHORE (https://shoreproject.eu), ProBleu (https://probleu.school/the-project) and Bluelights (https://blue-lights.eu) are each focused on tackling this issue.

### Fältbiologerna

Two of the youth attendees are members of Nature and Youth Sweden (Fältbiologerna: https://faltbiologerna.se/om-oss). The organization aims to first and foremost mobilize youths with an interest in climate and environmental issues, specifically focused on the value of education and the value of citizen science. The organization believes that all policymaking and impact work should have a solid foundation in knowledge about the world around us. Fältbiologerna is currently undertaking an EU Parliamentary campaign with a focus on fisheries and fisheries politics, and they hope to engage young scientific minds in creating a healthy sea and ecosystem.

## Connecting youth and policy makers

While decision making on the EU level was seen as important by the participants, they also discussed the need for clearer motivation from politicians on a national level. Engaging on a national level was felt to be easier than addressing the EU because discussions could focus on smaller scale and localised issues affecting local communities and where actions would be more attainable.

The participant from the Finnish Ministry of the Environment welcomed the one Finnish youth participant to visit the ministry to discuss these ideas further, acknowledging the importance of the words of the future generation who will inherit the environment left to them.

## Informed consent

While information about the recording of the event was made available in the privacy policy of the main conference registration form, as well as for those participants who were under the age of 18 where permission was sought from their guardians, there was an oversight in providing this information in the youth registration form. For future events, the project will ensure that all registration forms will have a clear link to the project's privacy policy so that the information on recordings is clear for all prior to their participation.

The rights of individuals who do not wish their likeness to be used on social media without prior consent are fully respected, and as such neither images that include the youth participants, nor the recording from the Youth Event have been published.

For the workshop sessions where youth participants requested to join, the recordings of these have been made accessible through the project website page, in line with what was agreed with said participants.

## Afternoon plenary

### Summary of workshops

During the afternoon plenary, representatives from each of the workshops were brought back to the stage to discuss their take-home messages from the day. The messages incorporated input from both the in-person and online sessions. The presentations are available at: https://protectbaltic.eu/bsc2024-workshop-summary

Read the key findings sections from each workshop for more detail, but here is a breakdown from each workshop.

**Management**: Stakeholders expressed a desire for early involvement in management planning processes and emphasized the need for clear objectives and measures. There were differing priorities among stakeholder groups, with industry focusing on clarity of targets and measures, while NGOs and research institutions prioritized improving the status of species and habitats.

**Spatial modelling**: Discussions focused on the importance of adequate data and the need for harmonized data across the Baltic Sea region. Participants explored alternative modelling approaches, stressing the significance of confidence assessment in produced maps and the importance of outreach to stakeholders.

**Ecosystem services**: Participants highlighted the need to directly apply ecosystem service outputs to policymaking and increase accessibility of these outputs, particularly for younger audiences. There was also emphasis on understanding diverse valuation methods and exploring the reciprocal relationship between human activities and nature.

**Legal frameworks**: Fragmentation in marine governance, particularly across sectors, was identified as a significant challenge. Recommendations included reforming legal frameworks to promote integration and resolving conflicts of interest through mediation when dialogue becomes unproductive.

**MPA Portal**: Attendees emphasized the importance of simplicity and informativeness in the MPA portal, ensuring it does not increase workload for MPA managers. They also highlighted the necessity of including map functionality and providing various data visualization options.

**Restoration**: Discussions centred on the need for clear objectives, effective monitoring, and prioritization of actions for restoration. Participants highlighted the importance of multi-stakeholder involvement in restoration activities and the necessity to balance incentives and risks for private sector involvement.

**Governance**: Governance was defined as encompassing processes, structures, principles, and enablers for decision-making. Strengths included cooperation, while weaknesses included fragmented governance and prioritization of economic interests over protection.

Solutions proposed included engaging stakeholders at multiple scales and fostering transformative change in societal attitudes towards nature.

**Monitoring**: Emphasis was placed on aligning monitoring programs with other initiatives to ensure data reliability and accessibility. Participants stressed the importance of guaranteeing high-quality data and facilitating data access for all stakeholders.

**Coherence**: Key conclusions included the significance of technological connectivity for network development, the need for Baltic-wide assessments to guide national efforts, and the importance of establishing strictly protected areas to improve biodiversity status. Cooperation between researchers and policymakers was highlighted as crucial for achieving coherence in MPA networks.

**MPA Europe**: Participants stressed the need to link scientific knowledge with marine spatial planning and emphasized the need to engage diverse stakeholders, including the business community, to drive marine biodiversity protection. Discussions highlighted the significance of understanding public and business perceptions and exploring collaborations with businesses to advance protection goals. Integrating methodologies with existing Baltic initiatives was also highlighted, as well as aligning local and national protection efforts within a broader European context.

## The Baltic Sea: a sustainable future – by you (AI video)

During the event, an innovative approach was employed to harness the collective insights and visions of participants towards the future of the Baltic Sea. At the start of the event, all attendees were invited to respond to two pivotal questions: "What is their ideal future for the Baltic Sea?" and "What is the role of protected areas in achieving this ideal?"

The responses were collected through Slido and in a pioneering collaboration with the event agency Unie and their AI tool called Evie (https://unie.fi/en/). The responses were synthesized and transformed into a visually captivating video that was screened live to the audience during the closing plenary of the event. The AI weaved together their insights and sentiments to craft a narrative that resonated with the attendees' collective vision for the Baltic Sea's future.

This collaborative endeavour exemplified the intersection of technology and human insight, illustrating how innovative AI tools can amplify and articulate the voices of stakeholders in shaping strategies for sustainability.

The resulting video was published and made available on the PROTECT BALTIC website (https://protectbaltic.eu) and here: https://vimeo.com/919095020.



*Image 37: Still from the AI video produced in collaboration with UNIE, crafting the audience's input into visual and compelling content on the future of the Baltic Sea.*

The video is an outcome of a fusion of technology, community participation, and environmental stewardship, embodying the ethos of collaboration and collective action towards a shared vision of a thriving Baltic Sea region.

## Closing remarks and follow-up

The conclusion of the Baltic Stakeholder Conference 2024 marks not an end, but merely the beginning of a journey for PROTECT BALTIC.

Over the next four and a half years, it is imperative that the path ahead in the project is paved with collaboration. Central to this approach is an understanding that the project's stakeholders have diverse interests and commitments, and the aim is to foster participation that is driven by genuine interest rather than obligation. The project is multifaceted with many work packages that correlate to the workshops held during the event. We are seeking to engage stakeholders on the topics that resonate most with them.

With this in mind, the audience's input was sought through a final Slido poll. Two fundamental questions were asked in relation to their involvement moving forward: "How do you want to be involved?" and "On which topics?".

## How do you want to be involved?



*Figure 44: How do you want to be involved in PROTECT BALTIC? (n=38)*

## On which topics?
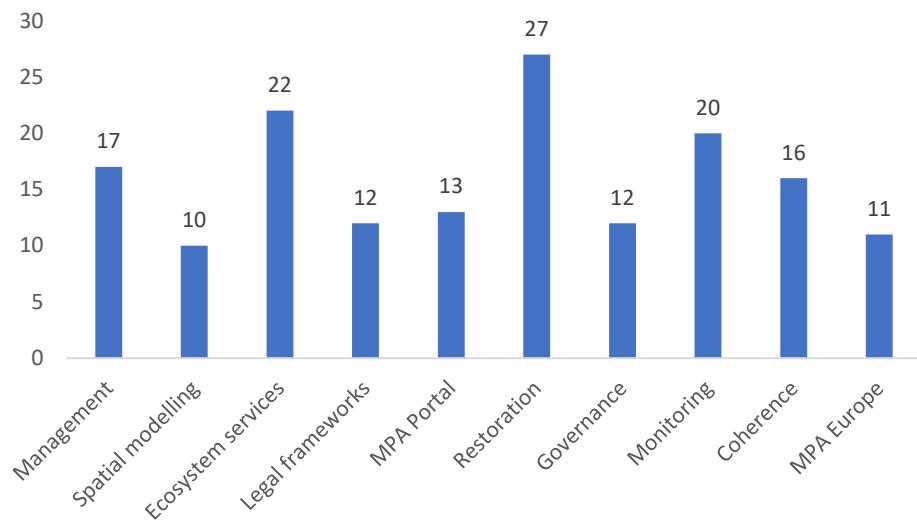


*Figure 45: On which topics do you want to be involved in PROTECT BALTIC? Multiple options could be selected (n=38)*

As the project moves forward, the next steps are clear. The invaluable input received will be meticulously integrated into the project's forthcoming work. Across the various workshops conducted, a wealth of insights and perspectives have been collected. Each strand of work within the project will heed this input, shaping the project's trajectory. While some contributions may be immediately relevant, others may inform at a later stage. Nonetheless, every insight is important and will contribute.

The input received feedback from the project stakeholder is deeply valuable, and it will be used to continue improving throughout the project. A feedback form was circulated to all participants, the results of which can be found in Annex III.

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## Annex I – Stakeholder mapping, registrants, and attendees

*Table A1.1. Preliminary overall list of stakeholders, grouped by sectors. This list was used to attract registrations for the Baltic Stakeholder Conference. Stakeholders were added to the list either through direct research or by disseminating the conference information to the Working Groups and Expert Groups of HELCOM. Where the country column is left blank, the stakeholder's location is considered to be international.*

| National authorities | |
|---|---|
| **Stakeholder** | **Country/Countries** |
| Ministries of Environment | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Climate | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Fisheries, Agriculture and Forestry | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Energy | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Shipping and Transport | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Defence | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of the Interior | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Infrastructure | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |
| Ministries of Education | Denmark, Germany, Estonia, Finland, Sweden, Latvia, Lithuania, Poland |

| Regional governments and government agencies | |
|---|---|
| **Stakeholder** | **Country** |
| Agency for Environment, Nature Conservation, and Geology MV | Germany |
| Government of Åland | Finland |
| BG for Transport and Traffic, Ship Safety Division | Germany |
| Central Command for Maritime Emergencies Germany | Germany |
| Centre for Environment, Fisheries and Aquaculture Science (CEFAS) | United Kingdom |
| Danish Environmental Protection Agency (DEPA) | Denmark |
| Danish Geodata Agency | Denmark |
| Danish Maritime Authority | Denmark |
| Environmental Protection Agency | Lithuania |
| Estonian Environment Agency | Estonia |
| Estonian Navy | Estonia |
| Estonian Transport Administration | Estonia |
| Federal Maritime and Hydrographic Agency | Germany |
| Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) | Germany |
| Finnish Food Authority | Finland |
| Finnish Transport and Communications Agency | Finland |
| Finnish Transport Infrastructure Agency | Finland |
| Finnish Wildlife Agency | Finland |
| General Directorate for Environmental Protection | Poland |
| German Environment Agency | Germany |
| Hydrographic Office of Polish Navy | Poland |
| Itä-Uusimaa Rescue Service | Finland |
| Medical Products Agency Sweden | Sweden |

| Ministry for Nature Protection and Geology Mecklenburg-Vorpommern | Germany |
|---|---|
| Latvian Coast Guard Service | Latvia |
| Latvian Environment: Geology and Meteorology Centre | Latvia |
| Maritime Administration of Latvia | Latvia |
| Maritime office in Gdynia | Poland |
| Maritime Office in Szczecin | Poland |
| Maritime Search and Rescue Service | Poland |
| Metsähallitus | Finland |
| Ministry for Climate Protection, Agriculture, Rural Areas and the Environment Mecklenburg-Vorpommern | Germany |
| National Headquarters of the State Fire Service of Poland | Poland |
| Nature Conservation Agency | Estonia |
| Nature Conservation Agency | Latvia |
| Norwegian Coastal Administration (Kystverket) | Norway |
| Polish Armed Forces | Poland |
| Polish Naval Academy | Poland |
| Radiation and Nuclear Safety Authority (STUK) | Finland |
| Radiation Protection Centre | Lithuania |
| Regional Council of Southwest Finland | Finland |
| Rijkswaterstaat, Ministry of Infrastructure and Water Management | The Netherlands |
| Royal Danish Navy Command | Denmark |
| State Agency for the Environment Schleswig-Holstein | Germany |
| State Water Holding Polish Waters | Poland |
| Swedish Agency for Marine and Water Management (SwAM) | Sweden |
| Swedish Board of Agriculture | Sweden |

| | |
|---|---|
| Swedish Civil Contingencies Agency (MSB) | Sweden |
| Swedish Civil Contingency Agency | Sweden |
| Swedish Coastguard | Sweden |
| Swedish Defence Research Agency | Sweden |
| Swedish Environmental Protection Agency | Sweden |
| Swedish Maritime Administration | Sweden |
| Swedish Meteorological and Hydrological Institute (SMHI) | Sweden |
| Swedish Transport Agency | Sweden |
| The Danish Environmental Protection Agency | Denmark |
| The Finnish Border Guard | Finland |
| The Swedish Radiation Safety Authority | Sweden |
| Centre for Economic Development, Transport and the Environment | Finland |
| Shom | France |
| State Service for Protected Areas (VSTT) | Latvia |
| **Municipalities** | |
| **Stakeholder** | **Country** |
| Helsinki<br>Espoo<br>Turku<br>Kotka<br>Porvoo<br>Loviisa<br>Hamina<br>Ingå<br>Ekenäs<br>Hanko<br>Uusikaupunki | Finland |

| | |
|---|---|
| Rauma<br>City of Vaasa<br>Jakobstad<br>Kokkola<br>Raahe<br>City of Oulu<br>Tornio<br>Jyväskylä<br>Kemi<br>Lahti<br>Pori | |
| Luleå<br>Piteå<br>Umeå<br>Örnsköldsvik<br>Sundsvall<br>Hudiksvall<br>Söderhamn<br>Gävle<br>City of Mariehamn<br>City of Stockholm<br>Västerås<br>Nyköping<br>Norrköping<br>Kalmar<br>Visby (Gotland)<br>Malmö<br>Helsingborg | Sweden |

| | |
|---|---|
| Karlskrona<br>Linköping<br>Trelleborg<br>Göteborg<br>Örebro<br>Växjö | |
| Copenhagen<br>Aalborg<br>Aarhus<br>Arendal<br>Odense<br>Ronne (Bornholm)<br>Guldborgsund<br>Kolding<br>**Naestved**<br>Guldborgsund | Denmark |
| Flensburg<br>Kiel<br>Bergen auf Rügen (Rügen Island)<br>Neustadt<br>Luebeck<br>Wismar<br>Rostock<br>Stralsund<br>Greifswald<br>Travemünde<br>Hamburg | Germany |

| | |
|---|---|
| Kołobrzeg<br>Gdynia<br>Gdansk<br>Darlowo<br>Elblag<br>Koszalin<br>Mielno<br>Reda<br>Rumia<br>Sejny<br>Slupsk<br>Sopot<br>Ustka | Poland |
| Cesis<br>Jekabpils<br>Jelgava<br>Valmiera<br>Liepaja<br>Pavilosta<br>Ventspils | Latvia |
| Gargzdai<br>Klapeida<br>Palanga<br>Riga<br>Jonava<br>Kaunas<br>Panevezys<br>Rokiskis | Lithuania |

| | |
|---|---|
| Taurage | |
| Elva | Estonia |
| Pärnu | |
| Haapsalu | |
| City of Tallinn | |
| Rakvere | |
| Tartu | |
| **Students and educational institutions** | |
| **Stakeholder** | **Country** |
| Czech Technical University in Prague | Czech Republic |
| University of Ostrava | Czech Republic |
| VSB- Technical University of Ostrava | Czech Republic |
| Estonian Business School | Estonia |
| Estonian University of Life Sciences | Estonia |
| Tallinn University of Technology | Estonia |
| University of Tartu | Estonia |
| Åbo Akademi University | Finland |
| Åland University of Applied Sciences | Finland |
| Arcada University of Applied Sciences | Finland |
| Haaga-Helia University of Applied Sciences | Finland |
| Novia University of Applied Sciences | Finland |
| Satakunta University of Applied Sciences | Finland |
| University of Jyväskylä | Finland |
| University of Turku | Finland |
| Brandenburg Medical School (MHB) | Germany |
| Hamburg University of Applied Sciences | Germany |
| Kiel University | Germany |

| Magdeburg-Stendal University of Applied Sciences | Germany |
|---|---|
| Technical University of Applied Sciences Wildau | Germany |
| Technische University of Lübeck | Germany |
| University of Greifswald | Germany |
| University of Rostock | Germany |
| Zittau/Görlitz University of Applied Sciences | Germany |
| BA School of Business and Finance | Latvia |
| Latvia University of Life Sciences and Technologies | Latvia |
| Liepaja University | Latvia |
| Riga Technical University | Latvia |
| University of Latvia | Latvia |
| Ventspils University of Applies Sciences | Latvia |
| Kaunas University of Technology | Lithuania |
| Klapeida University | Lithuania |
| Vlinius University | Lithuania |
| Adam Mickiewicz University | Poland |
| AGH University of Science and Technology | Poland |
| Bialystok University of Technology | Poland |
| Bydgoszcz University of Science and Technology | Poland |
| Calisia University-Kalisz | Poland |
| Gdansk University of Technology | Poland |
| Jagiellonian University | Poland |
| Lodz University of Technology | Poland |
| Lublin University of Technology | Poland |
| Maria-Curie Sklodowska University | Poland |
| Maritime University of Szczecin | Poland |
| Medical University of Gdansk | Poland |

| Medical University of Lodz | Poland |
|---|---|
| Poznan University of Economics and Business | Poland |
| Poznan University of Technology | Poland |
| Rzeszow University of Technology | Poland |
| Siedlce University of Natural Sciences and Humanities | Poland |
| State University of Applied Sciences | Poland |
| Stefan Batory State University | Poland |
| University of Gdansk | Poland |
| University of Lodz | Poland |
| University of Social Sciences and Humanities (Warsaw) | Poland |
| University of Szczecin | Poland |
| University of Warsaw | Poland |
| Warsaw School of Economics | Poland |
| West Pomeranian University of Technology | Poland |
| Wroclaw University of Economics and Business | Poland |
| Wroclaw University of Environmental and Life Sciences | Poland |
| WSB University of Poznan | Poland |
| Slovak University of Agriculture in Nitra | Slovakia |
| Blekinge Institute of Technology | Sweden |
| KTH, Royal Institute of Technology | Sweden |
| Linnaeus University | Sweden |
| Luleå University of Technology | Sweden |
| Lund University | Sweden |
| Malmö University | Sweden |
| Södertörn University | Sweden |
| SLU (Swedish University of Agricultural Sciences) | Sweden |
| Umeå University | Sweden |

| University of Gävle | Sweden |
|---|---|
| Uppsala University | Sweden |
| World Maritime University | Sweden |
| University of Helsinki | Finland |
| Hanken School of Economics | Finland |
| Metropolia University of Applied Science | Finland |
| Aalto University | Finland |
| Turku University of Applied Sciences | Finland |
| Kymenlaakso University of Applied Sciences | Finland |
| University of Oulu | Finland |
| University of Vaasa | Finland |
| Oulu University of Applied Sciences | Finland |
| Åland University of Applied Sciences | Finland |
| Kristianstad University | Sweden |
| University of Gothenburg | Sweden |
| Stockholm University | Sweden |
| Stockholm University | Sweden |
| Stockholm University | Sweden |
| Roskilde University | Denmark |
| Aarhus University | Denmark |
| Aalborg University | Denmark |
| University of Copenhagen | Denmark |
| University of Southern Denmark | Denmark |
| Svendborg International Maritime Academy | Denmark |
| Aarhus school of Maritime and Technical Engineering | Denmark |
| Copenhagen School of Maritime Education and Training | Denmark |
| Maritime Training and Education Centre | Denmark |

| Technical University of Denmark | Denmark |
| Stralsund University of Applied Sciences | Germany |
| Hamburg University | Germany |
| Wismar University | Germany |
| Jade University | Germany |
| Gdynia Maritime University | Poland |
| Tallinn University of Technology | Estonia |
| Chalmers University of Technology | Sweden |
| South-Eastern Finland University of Applied Sciences | Finland |
| University of Connecticut | United States of America |
| Nord University | Norway |
| **Teacher organisations** | |
| **Stakeholder** | **Country** |
| The Voice of the European Teachers | EU |
| European Association of Teachers (AEDE) | EU |
| Association of Teacher Education in Europe | EU |
| ECD Teachers Union in Finland (VOL) | Finland |
| OAJ General Education Teachers (OAJ-YSI) | Finland |
| Organisation of Swedish-speaking Teachers in Finland (FSL) | Finland |
| OAJ Vocational Educators and Trainers (OAO) | Finland |
| Union for University Teachers and Researchers (YLL) | Finland |
| Association for Experts in the Education Sector (Opsia) | Finland |
| Teacher Student Union of Finland (SOOL) | Finland |
| Retired Teachers in Finland (OSJ) | Finland |
| Association of Biology and Geography Teachers (BMOL) | Finland |

| National history museums | |
|---|---|
| **Stakeholder** | **Country** |
| Finnish Museum of Natural History | Finland |
| Swedish Museum of Natural History | Sweden |
| Natural History Museum of Denmark | Denmark |
| Natural History Museum Berlin | Germany |
| Museum of Natural Histroy Poland | Poland |
| Estonian Museum of Natural History | Estonia |
| Latvian National Museum of Natural History | Latvia |
| National Museum of Lithuania | Lithuania |
| German Oceanographic Museum | Germany |
| Lithuanian Sea Museum | Lithuania |
| Estonian Maritime Museum | Estonia |
| Scientific and research institutions | |
| **Stakeholder** | **Country** |
| AKTiiVS | Latvia |
| Centre for Environmental Policy | Latvia |
| AquaBiota Water Research | Sweden |
| AquaEcology GMBH | Germany |
| Baltic Nest Institute (Stockholm University) | Sweden |
| BioConsult GMBH & Co. | Germany |
| Centre of Marine Sciences (CCMAR) | Portugal |
| Danish Centre for Environment and Energy (Aarhus University) | Denmark |
| Ecosulis | United Kingdom |
| Estonian Environmental Research Centre | Estonia |
| Estonian Marine Institute | Estonia |

| European Network of Freshwater Research Organizations (EurAqua) | EU |
|---|---|
| Gavia EcoResearch | Germany |
| GEOMAR Helmholtz Centre for Ocean Research Kiel | Germany |
| Gollasch Consulting (GoConsult) | Germany |
| Gothenburg Marine Biological Laboratory | Sweden |
| Hafok AB | Sweden |
| HARTIS Integrated Nautical Services | Greece |
| Helmholtz-Zentrum Hereon | Germany |
| The Institute for Climate Protection, Energy and Mobility (IKEM) | Germany |
| Institute for Terrestrial and Aquatic Wildlife Research (ITAW), University of Veterinary Medicine Hannover, Foundation | Germany |
| Institute of Food Safety, Animal Health and Environment | Latvia |
| Institute of Food Safety, Animal Health and Environment | |
| Institute of Meteorology and Water Management - National Research Institute | Poland |
| Institute of Soil Science and Plant Cultivation - State Research Institute (IUNG) | Poland |
| Institute of Technology and Life Sciences - National Research Institute Falenty | Poland |
| Institute Technology and Life Science National Research Institute | Poland |
| Institute Technology and Life Science National Research Institute | Poland |
| Institute of Oceanology of Polish Academy of Sciences | Poland |
| Julius Kühn-Institute | Germany |
| Latvian Institute of Aquatic Ecology | Latvia |
| Leibniz Institute for Baltic Sea Research Warnemuende | Germany |
| Leibniz Institute for Ecological Urban and Regional Development | Germany |

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|---|---|
| Leibniz-Institute for Freshwater Ecology and Inland Fisheries | Germany |
| MaREI | Ireland |
| MariLim Aquatic Research GmbH | Germany |
| Museum and Institute of Zoology, Polish Academy of Sciences | Poland |
| National Inland Fisheries Institute | Poland |
| National Marine Fisheries Institute | Poland |
| Natural Resources Institute Finland (LUKE) | Finland |
| Norwegian Meteorological Institute | Norway |
| Polish Geological Institute | Poland |
| Research and Technology Centre (FTZ), Kiel University | Germany |
| Spanish Oceanographic Institute (COB-IEO) | Spain |
| Stockholm Resilience Centre | Sweden |
| Swedish Environmental Research Institute (ILV) | Sweden |
| Swedish Meteorological and Hydrological Institute (SMHI) | Sweden |
| Finnish Environment Institute (SYKE) | Finland |
| TalTech Marine Systems Institute | Estonia |
| Thünen Institute of Fisheries Ecology | Germany |
| **Sibling projects** | |
| **Stakeholder** | **Country** |
| Blue4All | |
| MSP4Bio | |
| MPA Europe | |
| EFFECTIVE | |
| Biodiversea | |
| EMSP | |
| ReMAP | |

| Environmental NGOs | |
|---|---|
| **Stakeholder** | **Country** |
| Africa Climate and Environment Foundation (ACEF) | |
| Aplinkosaugos koalicija | Lithuania |
| Baltic Environmental Forum - Latvia | Latvia |
| Baltic Environmental Forum - Latvia | Latvia |
| Baltic Farmers' Forum on Environment (BFFE) | |
| Baltic Operational Oceanographic System (BOOS) | |
| Baltic Organizations' Network for Funding Science (BONUS EEIG) | |
| Baltic Salmon Fund (BSF) | Sweden |
| Baltic Sea Action Group (BSAG) | Finland |
| Baltic Sea Advisory Council (BSAC) | |
| Baltic Sea States Subregional Co-operation (BSSSC) | |
| Baltic Waters | Sweden |
| BirdLife International | |
| Blue Marine Foundation | United Kingdom |
| BUND | Germany |
| Coalition Clean Baltic (CCB) | Sweden |
| Conference of Peripheral Maritime Regions of Europe - Baltic Sea Commission (CPMR) | |
| The Danish Society for Nature Conservation | Denmark |
| Der Bund Heimat und Umwelt in Deutschland (BHU) | Germany |
| Deutscher Naturschutzring (DNR) | Germany |
| Deutsche Meerestiftung | Germany |
| Deutsche Umwelthilfe | Germany |
| ElasmOcean | Germany |
| Estonia Society for Nature Conservation | Estonia |

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|---|---|
| Estonian Fund for Nature | Estonia |
| Estonian Water Association | Estonia |
| EUCC - Coastal Union Germany | Germany |
| EuroNatur | Germany |
| Finnish Shipowners Association | Finland |
| Friends of the Earth Germany | Germany |
| Global Nature Fund | Germany |
| Green Legal Impact | Germany |
| Green Liberty | Latvia |
| Green Seas | |
| Green Transition Denmark | Denmark |
| John Nurminen Säätiö | Finland |
| JPI Oceans | Belgium |
| Just One Ocean | United Kingdom |
| Keep Sweden Tidy Foundation | Sweden |
| Keep the Archipelago Tidy Association (PSSRY) | Finland |
| Keep the Estonian Sea Tidy (KEST) | Estonia |
| Latvian Fund for Nature | Latvia |
| Lithuanian Fund for Nature | Lithuania |
| Finnish Natural Heritage Foundation | Finland |
| Majaczech z. s. and VŠB - Technical University Ostrava | Czech Republic |
| MARE Foundation | Poland |
| Marine Conservation Society | United Kingdom |
| Marine Stewardship Council (MSC) | Poland |
| Marine Stewardship Council (MSC) | Finland |
| Marine Stewardship Council (MSC) | United Kingdom |
| NABU | Germany |

| Natur och Miljö | Finland |
|---|---|
| Nerush Natura' Foundation | Poland |
| Ocean Care | Switzerland |
| Oceana | United States of America |
| Pasaules Dabas Fonds in Association with WWF | Latvia |
| Pidä Saaristo Siistinä | Finland |
| PlasticsEurope | Belgium |
| Polish Ecological Club | Poland |
| Pure Ocean | |
| Race for the Baltic | Sweden |
| rare | United States of America |
| Regeneration | |
| Relief Action African Organization (RAO) | Tanzania |
| Saami Council | Norway |
| Sea Alarm Foundation | The Netherlands |
| Sea Save Foundation | United States |
| Seas at Risk | Belgium |
| The Finnish Association for Nature Conservation | Finland |
| Swedish Society for Nature Conservation | Sweden |
| The Baltic Sea Conservation Foundation | Germany |
| The Coastal and Marine Union (EUCC) | The Netherlands |
| The Pew Charitable Trusts | United States of America |
| Voice of the Ocean | Sweden |
| Waste Free Oceans Foundation | |
| Wildlife Conservation Society | United States of America |
| WWF Baltic | Sweden |
| WWF Finland | Finland |

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|---|---|
| WWF Germany | Germany |
| WWF Poland | Poland |
| WWF Sweden | Sweden |
| **Resource users and industry** | |
| **Stakeholder** | **Country** |
| Ålands Fiskare | Finland |
| Ambiens | Poland |
| Ambiens | Poland |
| Baltic Sea Fisheries | |
| Baltic Sea Fishing | |
| BalticSea2020 | Sweden |
| Cultural heritage | |
| Eolus | Finland |
| European Anglers Alliance (EAA) | Germany |
| European Boating Industry (EBI) | Belgium |
| European Sea Ports Organisation (ESPO) | Belgium |
| Federation of European Aquaculture Producers (FEAP) | Belgium |
| Ignitis Renewables | Lithuania |
| Interferry | |
| International Association of Independent Tanker Owners (INTERTANKO) | |
| Large scale commercial fisheries | |
| Low Impact Fishers of Europe (LIFE) | |
| Mining | |
| The Central Union of Agricultural Producers and Forest Owners (MTK) | Finland |
| Nordic Hunter's Alliance | Denmark |

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|---|---|
| Off-shore energy production | |
| Our Fish | |
| OX2 | Finland |
| Pomeranian Voivodeship Office in Gdańsk | Poland |
| Port of Gdansk Authority S.A. | Poland |
| Rädda Lumparn | Åland |
| Recreational fisheries | |
| Seafish | United Kingdom |
| Seas at Risk | |
| Small scale fisheries | |
| The Office for Registration of Medicinal Products, Medical Devices and Biocidal Products | Poland |
| University of Gothenburg/ Department of Biological and Environmental Sciences/Fish Endocrinology Laboratory | Sweden |
| Zarząd Morskiego Portu Gdynia SA | Poland |
| **Business associations** | |
| **Stakeholder** | **Country** |
| Business Lolland-Falster | Denmark |
| Cruise Lines International Association Europe (CLIA Europe) | Belgium |
| Enterprise Estonia (EAS) | Estonia |
| Estonian Water Association | Estonia |
| European Boating Association (EBA) | Belgium |
| European Boating Industry (EBI) | Belgium |
| European Community Shipowners' Associations (ECSA) | Finland |
| European Dredging Association (EuDA) | Belgium |
| EuroPeche | Belgium |
| Finnish Water Utilities Association | Finland |

| Stakeholder | Country |
|---|---|
| International Association of Oil and Gas Producers (IOGP) | |
| International Chamber of Shipping (ICS) | United Kingdom |
| IPIECA | United Kingdom |
| Nordic Boat Council (NBC) | |
| Northern Dimension Partnership on Transport and Logistics (NDPTL) | Finland |
| Roschier | Finland |
| Simmons & Simmons | United Kingdom |
| Sitra | Finland |
| Stardust Impact Storytelling | Sweden |
| Swedish Boat Union (SBU) | Sweden |
| The Nordic Green Bank (NEFCO) | Finland |
| **EU and regional bodies** | |
| **Stakeholder** | **Country** |
| ASCOBANS | Germany |
| Baltic Pilotage Authorities Commission (BPAC) | |
| Baltic Ports Organization (BPO) | Estonia |
| Baltic Sea Region Youth Forum (CBSS) | |
| Black Sea Commission | Türkiye |
| Blue Mission Banos Project | EU |
| Council of the Baltic Sea States (CBSS) | EU |
| EU Biogeographocal Process | EU |
| EU Commission | EU |
| EU DG Env | EU |
| EU DG Mare | EU |
| EU DG RI | EU |
| EU Marine Expert Group | EU |

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|---|---|
| European Countries Biologists Association (ECBA) | |
| European Environment Agency (EEA) | Denmark |
| European Environmental Bureau (EEB) | Belgium |
| European Federation of National Associations of Water and Wastewater Services (EUREAU) | Belgium |
| European Maritime Safety Agency (EMSA) | Portugal |
| Federation of European Aquaculture Producers (FEAP) | |
| Fertilizers Europe | |
| Finnish MSP co-ordination - Region Council of Southwest Finland | Finland |
| Global Water Partnership Central and Eastern Europe | |
| HELCOM Secretariat | Finland |
| HORIZON Blue Mission Oceans | Belgium |
| MSFD | Belgium |
| NADEG | Belgium |
| OSPAR | United Kingdom |
| Rewilding Europe | The Netherlands |
| SUBMARINER Network for Blue Growth EEIG | Germany |
| Sustainable Projects EU | Germany |
| Vision and Strategies Around the Baltic Sea (VASAB) | Latvia |
| Water Framework Directive (WFD) | Belgium |
| **Civil society** | |
| **Stakeholder** | **Country** |
| Privately-owned MPAs | |
| Union of the Baltic Cities (UBC) | |

| IGOs | |
|---|---|
| **Stakeholder** | **Country** |
| Center for International Environmental Law (CIEL) | United States of America |
| Convention on Biological Diversity (CBD) | |
| Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) | Switzerland |
| Convention on the Conservation of Migratory Species of Wild Animals (CMS) | Germany |
| Eurofish International Organisation | |
| Global Environment Facility (GEF) | |
| Intergovernmental Oceanographic Commission (IOC) | France |
| Intergovernmental Panel on Climate Change (IPCC) | Switzerland |
| Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) | Germany |
| International Atomic Energy Agency (IAEA) | Austria |
| International Baltic Earth Secretariat | Germany |
| International Chamber of Shipping (ICS) | United Kingdom |
| International Council for the Exploration of the Sea (ICES) | Denmark |
| International Dialogue on Underwater Munitions (IDUM) | The Netherlands |
| International Maritime Organization (IMO) | United Kingdom |
| International Seabed Authority (ISA) | Jamaica |
| International Union for Conservation of Nature's World Commission (IUCN) | |
| Local Authorities International Environmental Organisation (KIMO) | United Kingdom |
| Marine Conservation Institute (MCI) | United States of America |

| Northern Dimension Partnership on Transport & Logistics (NDPTL) | Finland |
|---|---|
| OCEANA | United States of America |
| RAMSAR Convention | Iran |
| United Nations Environment Programme (UNEP) | Kenya |
| World Resources Institute | United States of America |
| **Youth organisations** | |
| **Stakeholder** | **Country** |
| Active Youth | Lithuania |
| AEGEE Europe | EU |
| Baltic Sea Parliamentary Youth Forum | |
| Baltic Sea Region Youth Forum | |
| Baltic Sea Youth Dialogue | |
| Baltic Sea Youth Platform | EU |
| Baltic Sea Youth Working Groups | EU |
| CBSS | |
| CCB | EU |
| Danske Studerendes Faellesråd (DSF) | Denmark |
| Deutscher Jugendbund fuer Naturbeobachtung | Germany |
| Eesti Uliopilaskondade Liit (EYL) | Estonia |
| Erasmus Student Network | EU |
| Erasmus Student Network Finland | Finland |
| European Students' Union | EU |
| European Youth Card Association | EU |
| European Youth Event | EU |
| European Youth Forum | EU |
| Fältbiologerna | Sweden |

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|---|---|
| Free Association of Student Unions (FZS) | Germany |
| Generation Climate Europe (GCE) | EU |
| Global Youth Biodiversity Network | |
| International Young Naturefriends | EU |
| NaturFreundeJugend | Germany |
| GIAN-GIO | Italy |
| Lithuania's Student Union (LSS) | Lithuania |
| Organising Bureau of European School Student Unions (OBESSU) | EU |
| Otwarty Plan | Poland |
| PUSH Sverige | Sweden |
| SAME | EU |
| Student Union of Latvia (LSA) | Latvia |
| Students' Parliament of the Republic of Poland(PSRP) | Poland |
| Suomen Opiskelijakuntien liitto (SAMOK) | Finland |
| Suomen Ylioppilaskuntien liitto (SYL) | Finland |
| The Baltic University Programme | EU |
| The Swedish National Union of Students | Sweden |
| Young European Federalists (JEF) | EU |
| Young Friends of the Earth (YFOEE) | EU |
| Youth 4 Europe | EU |
| Youth 4 Nature | EU |
| Youth and Environment Europe (YEE) | EU |
| Youth 4 Ocean | EU |
| Young European Biologists | EU |
| University of Helsinki: Faculty of Biological and Env. Sciences | Finland |
| Aalto University: School of Science | Finland |
| Free Association of Student Unions | Germany |

| Saminuorra | Sweden |
|---|---|
| Sami Youth Council | Finland |
| EU-Sami Youth Idea Lab | EU |
| Finnish Sami Youth Association | Finland |
| ProBleu | Spain |
| Shore | Türkiye |
| BlueLights | EU |
| Stockholm University Student's Union (SUS) | Sweden |
| Business Association at Stockholm University | Sweden |
| Stockholm University Social Sciences Association | Sweden |
| Stockholm University Natural Sciences Faculty Club | Sweden |
| Stockholm University Humanities Association | Sweden |
| The Law Students' Association Stockholm University | Sweden |
| Socionomy Faculty Association Stockholm University | Sweden |
| Law Student Union Lund University | Sweden |
| Humanities and Theology Student Union Lund University | Sweden |
| Science Student Union Lund University | Sweden |
| Social Science Union Lund University | Sweden |
| Student Union at the Faculty of Arts Lund University | Sweden |
| Student Union School of Business, Economics and Law Göteborg University | Sweden |
| Uppsala Union of Engineering and Science Students | Sweden |
| Uppsala Law Student Association | Sweden |
| Umeao Student Union of Science and Technology | Sweden |
| Gdansk Tech Students' Union | Poland |
| Student associations in Viikki | Finland |
| University of Turku Sea and Maritime Studies Dept | Finland |

*Table A1.2. The list of organizations and sectors that registered for the Baltic Stakeholder Conference 2024.*

| National authorities | |
|---|---|
| **Stakeholder** | **Country/Countries** |
| Enterprise Estonia | Estonia |
| Ministries of Environment | Denmark, Finland, Lithuania, Germany |
| Ministries of Climate | Estonia |
| Ministries of Fisheries, Agriculture and Forestry | Poland, Estonia, Finland, Denmark |
| Ministries of Shipping and Transport | Lithuania |
| Ministries of Infrastructure | Poland, The Netherlands |
| South African Navy | South Africa |
| **Regional governments and government agencies** | |
| **Stakeholder** | **Country** |
| County Administration Board of Kalmar | Sweden |
| County Administration Board | Sweden |
| County Administration Board of Västerbotten | Sweden |
| County Administrative Board of Västra Götaland | Sweden |
| County Administration Board of Västernorrland | Sweden |
| Federal Maritime and Hydrographic Agency | Germany |
| Finnish Transport Infrastucture Agency | Finland |
| German Environment Agency | Germany |
| Government of Åland | Finland |
| Klapeida Region | Lithuania |
| Kurzeme Planning Region | Latvia |
| Maritime office in Gdynia | Poland |
| Maritime Office in Szczecin | Poland |
| Metsähallitus | Finland |

| Nature Conservation Agency | Latvia |
|---|---|
| PGW WP | Poland |
| Regional Council of Kymenlaakso | Finland |
| State Agency for the Environment Schleswig-Holstein | Germany |
| State Environmental Services | Latvia |
| State Service for Protected Areas (VSTT) | Latvia |
| Swedish Agency for Marine and Water Management (SwAM) | Sweden |
| Swedish County Administrative Board | Sweden |
| The Federal Maritime and Hydrographic Agency | Germany |
| The Office for Registration of Medicinal Products, Medical Devices and Biocidal Products | Poland |
| The Swedish Agency for Marine and Water Management | Sweden |
| The Swedish Meterological and Hydrological Institute (SMHI) | Sweden |
| Varinais-Suomen ELY-keskus (Centre for Economic Development, Transport and the Environment | Finland |
| Verhovna Rada of Ukraine (Parliament) | Ukraine |
| **Students and educational institutions** | |
| **Stakeholder** | **Country** |
| Chalmers University of Technology | Sweden |
| Gdynia Maritime University | Poland |
| Ivan Franko National University | Ukraine |
| Jade University of Applied Sciences | Germany |
| Klapeida University | Lithuania |
| Lund University | Sweden |
| Lviv National University | Ukraine |
| Maritime University of Szczecin | Poland |
| Mus Alparslan University | Turkey |

| | |
|---|---|
| Nord University | Norway |
| Novia University of Applied Sciences | Finland |
| Riga Technical University | Latvia |
| Southeastern Finland University of Applied Sciences | Finland |
| Stockholm University | Sweden |
| Swedish University of Agricultural Sciences | Sweden |
| Tallinn University of Technology | Estonia |
| Talminadu Dr Ambedkar Law University | India |
| Technical University of Denmark | Denmark |
| University of Connecticut | United States of America |
| University of Greifswald | Germany |
| University of Helsinki | Finland |
| University of Kiel | Germany |
| University of Tartu | Estonia |
| University of Warsaw | Poland |
| Uppsala University | Sweden |
| Zaporizhia National University | Ukraine |
| Åbo Akademi University | Finland |
| **National history museums** | |
| **Stakeholder** | **Country** |
| Lithuanian Sea Museum | Lithuania |
| **Scientific and research institutions** | |
| **Stakeholder** | **Country** |
| AKTiiVS | Latvia |
| Berger Geosciences (B-geO) | United States of America |
| BioConsult GMBH & Co. | Germany |
| Centre of Marine Sciences (CCMAR) | Portugal |

| Center for Coastal and Marine Studies (CCMS) | Bulgaria |
|---|---|
| Center for Ocean and Society | Germany |
| National Research Council of Italy | Italy |
| National Institute of Aquatic Resources | Denmark |
| Daugavpils University Agency – Latvian Institute of Hydroecology | Latvia |
| Estonian Marine Institute | Estonia |
| Finnish Environment Institute (SYKE) | Finland |
| Flanders Marine Institute (VLIZ) | Belgium |
| CMCC Foundation | Italy |
| GEOMAR Helmholtz Centre for Ocean Research Kiel | Germany |
| Global Institute for Research, Education and Scholarship (GIRES) | The Netherlands |
| Geological Survey of Finland (GTK) | Finland |
| Gothenburg Marine Biological Laboratory | Sweden |
| Hafok AB | Sweden |
| Institute for Avian Research | Germany |
| Institut fuer Klimaschutz, Energie und Mobilität (IKEM) | Germany |
| Institute of Food Safety, Animal Health and Environment | Latvia |
| Institute Technology and Life Science National Research Institute | Poland |
| Portuguese Institute for Sea and Atmosphere | Portugal |
| Latvian Institute of Aquatic Ecology | Latvia |
| Leibniz Institute for Baltic Sea Research Warnemuende | Germany |
| Marine Research Institute | Lithuania |
| Nature Research Centre | Lithuania |
| Naval Hydrographic and Oceanographic Service (SHOM) | France |
| Ocean Institute | Denmark |
| TUBITAK NAM | Türkiye |

| National Inland Fisheries Institute | Poland |
|---|---|
| National Marine Fisheries Institute | Poland |
| Natural Resources Institute Finland (LUKE) | Finland |
| Thünen Institute of Fisheries Ecology | Germany |
| **Sibling projects** | |
| **Stakeholder** | **Country** |
| MARHAB | |
| MPA Europe | |
| **Environmental NGOs** | |
| **Stakeholder** | **Country** |
| Africa Climate and Environment Foundation (ACEF) | |
| Baltic Environmental Forum - Latvia | Latvia |
| Baltic Sea Action Group (BSAG) | Finland |
| BirdLife Europe | Belgium |
| BirdLife International | United Kingdom |
| BirdLife Sweden | Sweden |
| BUND | Germany |
| Coalition Clean Baltic (CCB) | Sweden |
| Dalit Welfare Association | Nepal |
| Estonian Fund for Nature | Estonia |
| EUCC - Coastal Union Germany | Germany |
| John Nurminen Foundation | Finland |
| Keep the Archipelago Tidy Association (PSSRY) | Finland |
| Keep the Estonian Sea Tidy (KEST) | Estonia |
| KIMO International | United Kingdom |
| Majaczech z. s. and VŠB - Technical University Ostrava | Czech Republic |
| MOTUS Foundation | Poland |

| Nerush Natura' Foundation | Poland |
| Organisms Democracy | Germany |
| Polish Society for Protection of Birds | Poland |
| Race for the Baltic | Sweden |
| Relief Action African Organization (RAO) | Tanzania |
| The Danish Society for Nature Conservation | Denmark |
| The Pew Charitable Trusts | United States of America |
| Voice of the Ocean | Sweden |
| WWF Baltic | Sweden |
| WWF Denmark | Denmark |
| WWF Finland | Finland |
| WWF Germany | Germany |
| WWF Poland | Poland |
| WWF Sweden | Sweden |
| **Resource users and industry** | |
| **Stakeholder** | **Country** |
| Ambiens | Poland |
| Article 13 | United Kingdom |
| Baltic Salmon Fund | Sweden |
| Big Soldiers | Ukraine |
| BIMCO | Denmark |
| Blume | Peru |
| College of Fisheries Mpuat, Udaipur and Rajasthan (Aquaculture) | India |
| Eolus Offshore | Finland |
| Fish Endocrinology Lab (University of Gothenburg) | Sweden |
| HARTIS Integrated Nautical Services | Greece |

| Ignitis Renewables | Lithuania |
|---|---|
| Low Impact Fishers of Europe (LIFE) | |
| NatureCredits BV | The Netherlands |
| NatureMetrics | United Kingdom |
| Nemo Seafarms Oy | Finland |
| OX2 | Finland |
| Pelagia Nature and Environment | Sweden |
| Pondera Consult | Finland |
| Rejlers Finland | Finland |
| s.Pro-Sustainable projects/SUBMARINER Network | Germany |
| SALT | Norway |
| **Business associations** | |
| **Stakeholder** | **Country** |
| Business Lolland-Falster | Denmark |
| CLIMAZUL | Greece |
| Cruise Lines International Association Europe (CLIA Europe) | Belgium |
| Emmatex Enterprise | Cameroon |
| European Boating Association (EBA) | Belgium |
| European Boating Industry (EBI) | Belgium |
| European Fishmeal and fish oil producers | Denmark |
| Moderating.eu | The Netherlands |
| Simmons & Simmons | United Kingdom |
| Sitra | Finland |
| Swedish Boat Union (SBU) | Sweden |
| The Central Union of Agricultural Producers and Forest Owners (MTK) | Finland |
| The Nordic Green Bank (NEFCO) | Finland |

| Under Ytan | Åland |
|---|---|
| **EU and regional bodies** | |
| **Stakeholder** | **Country** |
| ASCOBANS | Germany |
| Baltic Sea Advisory Council | Lithuania |
| Council of the Baltic Sea States (CBSS) | EU |
| EU Commission | EU |
| EU DG Mare | EU |
| Finnish MSP co-ordination - Region Council of Southwest Finland | Finland |
| HELCOM | Finland |
| ICES Secretariat | Denmark |
| Interreg BSR Programme MA/JS | Germany |
| Marine Stewardship Council | |
| Priority Actions Programme/Regional Activity Centre (PAP/RAC) | Croatia |
| OSPAR | United Kingdom |
| NEFCO | Finland |
| Estonian Water Association | Estonia |
| Union of the Baltic Cities (UBC) | |
| **Civil society** | |
| **Stakeholder** | **Country** |
| Equity Nepal | Nepal |
| Feral Malmö | Sweden |
| **Youth organisations** | |
| **Stakeholder** | **Country** |
| Bund Jugend | Germany |
| Fältbiologerna | Sweden |

| University of Helsinki: Faculty of Biological and Env. Sciences | Finland |
|---|---|
| Voice of the Youth | Sweden |

*Table A1.3. The list of organizations and sectors that attended the Baltic Stakeholder Conference 2024 in-person and online.*

| National authorities | |
|---|---|
| **Stakeholder** | **Country/Countries** |
| Ministries of Environment | Finland, Lithuania, Denmark |
| Ministries of Climate | Estonia |
| Ministries of Fisheries, Agriculture and Forestry | Finland, Denmark, Poland |
| Ministries of Shipping and Transport | Lithuania |
| Ministries of Infrastructure | Poland, The Netherlands |
| Regional governments and government agencies | |
| **Stakeholder** | **Country** |
| Administration of Curonian Spit National Park | Lithuania |
| Administration of Lithuania Minor Protected Areas | Lithuania |
| County Administration Board of Kalmar | Sweden |
| County Administration Board | Sweden |
| County Administration Board of Västerbotten | Sweden |
| County Administrative Board of Västra Götaland | Sweden |
| County Administration Board of Västernorrland | Sweden |
| Federal Agency for Nature Conservation | Germany |
| Finnish Transport Infrastructure Agency | Finland |
| German Environment Agency | Germany |
| Government of Åland | Finland |
| Klaipeda Region | Lithuania |
| Kurzeme Planning Region | Latvia |
| Metsähallitus | Finland |

| Nature Conservation Agency | Latvia |
|---|---|
| State Water Holding "Polish Waters" (PGW WP) | Poland |
| Swedish Agency for Marine and Water Management (SwAM) | Sweden |
| Szczecin and Świnoujście Seaport Authority | Poland |
| The Office for Registration of Medicinal Products, Medical Devices and Biocidal Products | Poland |
| The Swedish Meteorological and Hydrological Institute (SMHI) | Sweden |
| Centre for Economic Development, Transport and the Environment | Finland |
| **Students and educational institutions** | |
| **Stakeholder** | **Country** |
| Chalmers University of Technology | Sweden |
| Gdynia Maritime University | Poland |
| Jade University of Applied Sciences | Germany |
| Klaipeda University | Lithuania |
| Lviv National University | Ukraine |
| Maritime University of Szczecin | Poland |
| Mus Alparslan University | Turkey |
| Nord University | Norway |
| Novia University of Applied Sciences | Finland |
| Southeastern Finland University of Applied Sciences | Finland |
| Stockholm University | Sweden |
| Swedish University of Agricultural Sciences | Sweden |
| Syddansk University | Denmark |
| Tallinn University of Technology | Estonia |
| Technical University of Denmark | Denmark |
| University of Greifswald | Germany |

| University of Helsinki | Finland |
|---|---|
| University of Kiel | Germany |
| University of Tartu | Estonia |
| University of Warsaw | Poland |
| Uppsala University | Sweden |
| Åbo Akademi University | Finland |
| **Scientific and research institutions** | |
| **Stakeholder** | **Country** |
| AKTiiVS | Latvia |
| Berger Geosciences (B-geO) | United States of America |
| BioConsult GMBH & Co. | Germany |
| Centre of Marine Sciences (CCMAR) | Portugal |
| Center for Coastal and Marine Studies (CCMS) | Bulgaria |
| Center for Ocean and Society | Germany |
| Finnish Environment Institute (SYKE) | Finland |
| GEOMAR Helmholtz Centre for Ocean Research Kiel | Germany |
| Gothenburg Marine Biological Laboratory | Sweden |
| Hafok AB | Sweden |
| Institute for Avian Research | Germany |
| Institute for Climate Protection, Energy and Mobility(IKEM) | Germany |
| Institute of Food Safety, Animal Health and Environment | Latvia |
| Latvian Institute of Aquatic Ecology | Latvia |
| Latvian Institute of Hydroecology | |
| Leibniz Institute for Baltic Sea Research Warnemuende | Germany |
| Nature Research Centre | Lithuania |
| Naval Hydrographic and Oceanographic Service (SHOM) | France |
| National Marine Fisheries Institute | Poland |

| Sibling projects | |
|---|---|
| **Stakeholder** | **Country** |
| MARHAB | |
| MPA Europe | |
| **Environmental NGOs** | |
| **Stakeholder** | **Country** |
| Baltic Environmental Forum - Latvia | Latvia |
| BirdLife Europe | Belgium |
| BirdLife Sweden | Sweden |
| Coalition Clean Baltic (CCB) | Sweden |
| Estonian Fund for Nature | Estonia |
| EUCC - Coastal Union Germany | Germany |
| Keep the Archipelago Tidy Association (PSSRY) | Finland |
| KIMO International | United Kingdom |
| MOTUS Foundation | Poland |
| Organisms Democracy | Germany |
| Swedish Society for Nature Conservation | Sweden |
| The Danish Society for Nature Conservation | Denmark |
| The Pew Charitable Trust | Poland |
| Voice of the Ocean | Sweden |
| WWF Germany | Germany |
| **Resource users and industry** | |
| **Stakeholder** | **Country** |
| Ambiens | Poland |
| Article 13 | United Kingdom |
| Baltic Salmon Fund | Sweden |
| BIMCO | Denmark |

| Eolus Offshore | Finland |
|---|---|
| HARTIS Integrated Nautical Services | Greece |
| Ignitis Renewables | Lithuania |
| NatureCredits BV | The Netherlands |
| NatureMetrics | United Kingdom |
| Nemo Seafarms Oy | Finland |
| Pelagia Nature and Environment | Sweden |
| s.Pro-Sustainable projects/SYBMARINER Network | Germany |
| SALT | Norway |
| **Business associations** | |
| **Stakeholder** | **Country** |
| Business Lolland-Falster | Denmark |
| CLIMAZUL | Greece |
| Cruise Lines International Association Europe (CLIA Europe) | Belgium |
| European Boating Association (EBA) | United Kingdom |
| Moderating.eu | The Netherlands |
| The Central Union of Agricultural Producers and Forest Owners (MTK) | Finland |
| The Nordic Green Bank (NEFCO) | |
| Under Ytan | Åland |
| **EU and regional bodies** | |
| **Stakeholder** | **Country** |
| ASCOBANS | Germany |
| Baltic Sea Advisory Council | Lithuania |
| Council of the Baltic Sea States (CBSS) | EU |
| EU Commission | EU |
| EU DG Mare | EU |

| Finnish MSP coordination - Region Council of Southwest Finland | Finland |
|---|---|
| HELCOM | Finland |
| ICES Secretariat | Denmark |
| Marine Stewardship Council | |
| Priority Actions Programme/Regional Activity Centre (PAP/RAC) | Croatia |
| OSPAR | United Kingdom |
| NEFCO | Finland |
| Estonian Water Association | Estonia |
| **Civil society** | |
| **Stakeholder** | **Country** |
| Feral Malmö | Sweden |
| **IGOs** | |
| **Stakeholder** | **Country** |
| UNESCO | |
| **Youth organisations** | |
| **Stakeholder** | **Country** |
| Bund Jugend | Germany |
| Nature and Youth Sweden (Fältbiologerna) | Sweden |
| University of Helsinki: Faculty of Biological and Env. Sciences | Finland |
| Voice of the Youth | Sweden |

## Breakdown of registrant statistics

233 participants attended the Baltic Stakeholder Conference 2024.
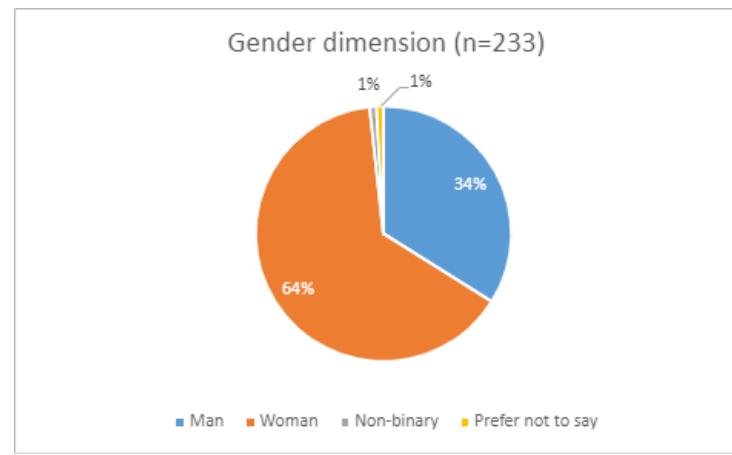164 participants attended online, and 69 participants attended in-person.
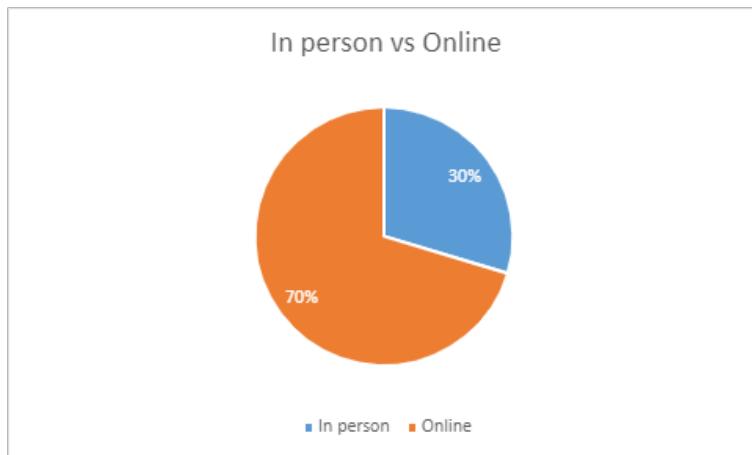


*Figure A1.1 – Split between in-person and online attendees (n=233)*



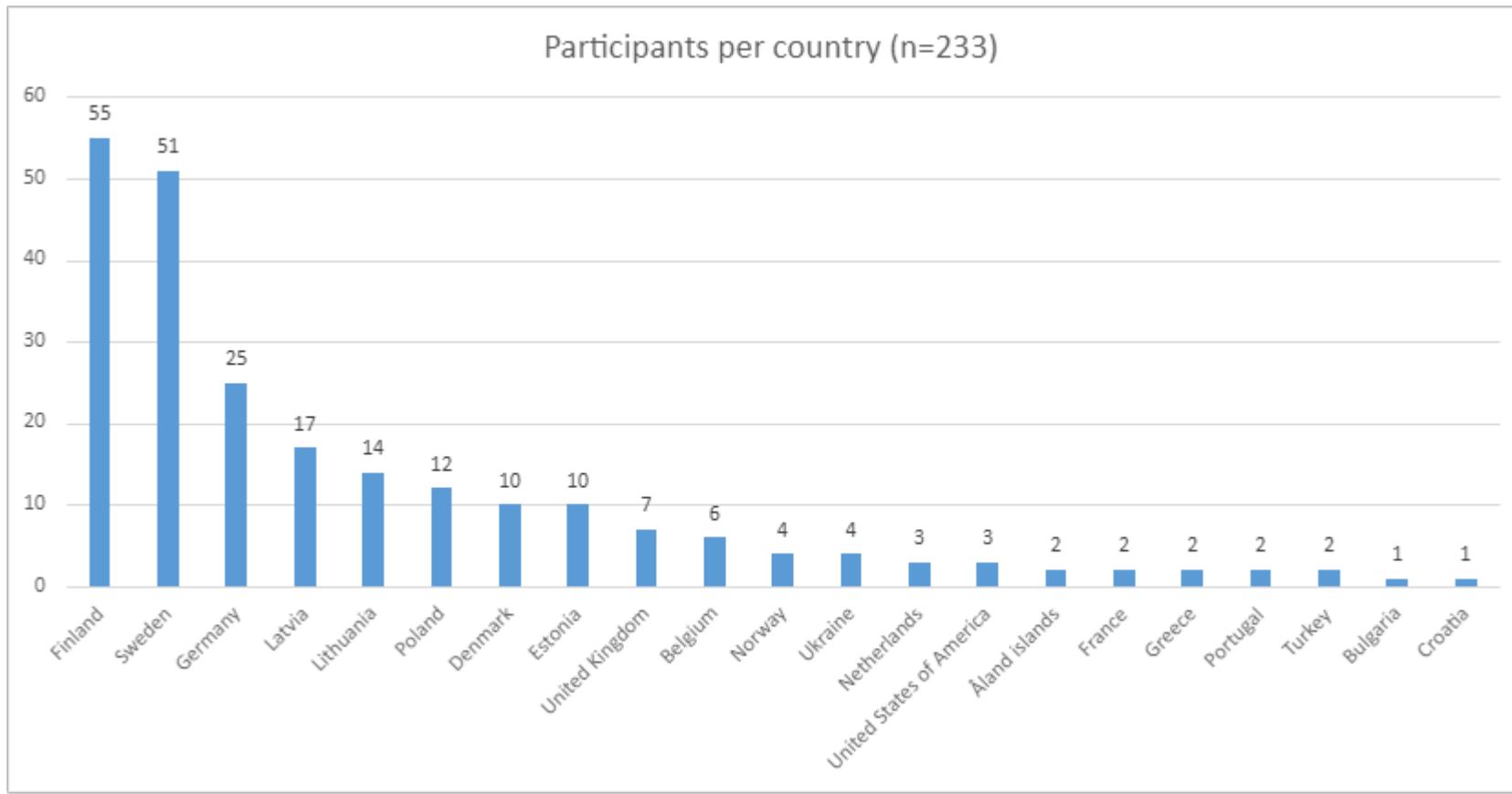*Figures A1.2 – Gender dimension among attendees (n=233)*

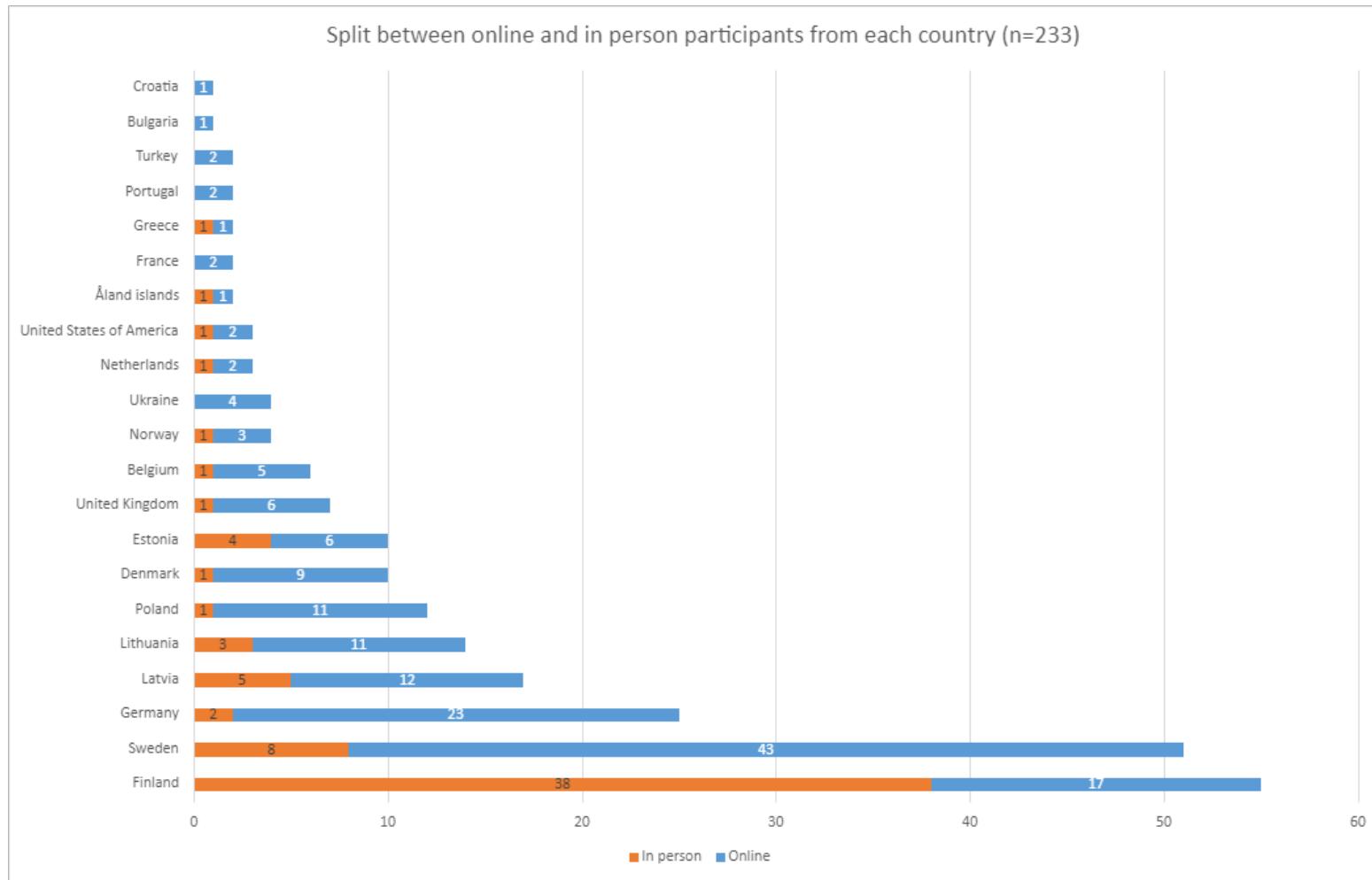*Figure A1.3 – Participants per country at Baltic Stakeholder Conference 2024*

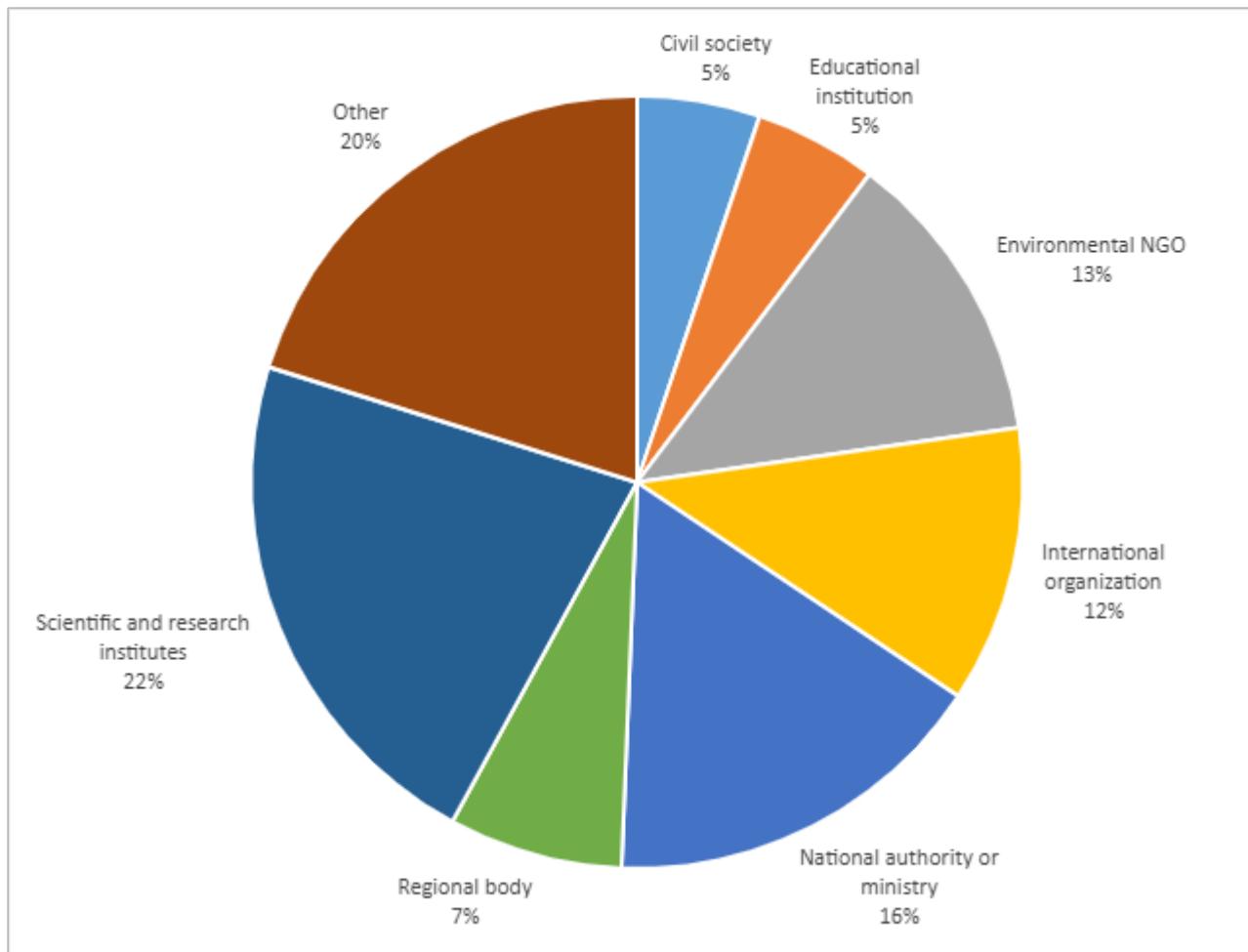*Figure A1.4 – Split between online and in-person participants per country.*

*Figure A1.5 – Split between different stakeholder groups in attendance during the Baltic Stakeholder Conference 2024 (n=233)*

## Annex II - Agenda of Baltic Stakeholder Conference 2024

The is also available on HELCOM's website (https://helcom.fi/bsc2024):

| Time | Activity stakeholder conference | Activity youth conference |
|---|---|---|
| 09:00 | Registration and coffee/tea | |
| 10:00 | **Plenary**<br>Opening – Rogier Elshout<br>Introduction – Jannica Haldin<br>Mission Ocean – Eduardo Carqueijeiro<br>Workshop intro – Rogier Elshout | **Plenary** |
| 11:00-13:00 | **Workshop block 1**<br>**Management** (Lasse Kurvinen, Darius Daunys, Jana Wolf)<br>**Spatial modelling** (Roland Pesch, Antti Takolander)<br>**Ecosystem services** (Lois Watt, Jolanda Linsén, Aino Ahvo, Susanna Jernberg)<br>**Legislation** (Henrik Ringbom, Niels Krabbe, Estefania Cortez, Andrea Cervantes)<br>**MPA Portal** (Kimmo Koivumäki, Jannica Haldin) | Youth workshop – Rogier Elshout |
| 13:00-14:30 | Lunch break | Lunch break |
| 14:30-16:30 | **Workshop block 2**<br>**Restoration** (Lasse Kurvinen, Anette Bäck)<br>**Governance** (Jannica Haldin, Venla Ala-Harja)<br>**Monitoring** (Georg Martin, Hanna-Eliisa Luts)<br>**Coherence** (Ulf Bergström, Edmond Sacre, Petra Kääriä, Cecilia Nyman)<br>**MPA Europe** (Mark Costello, Belinda Bramley, Thanos Smanis, Anna Addamo, Silas Principe, Anna Urgeghe) | Youth workshop (facilitated by Rogier) |
| 16:30-17:00 | Coffee/Tea break | Coffee/Tea break |
| 17:00-17:55 | **Plenary**<br>**Intro to afternoon plenary** – Rogier Elshout<br>**Summary panel** – top three take-home messages – in-person facilitators, incl. Rogier Elshout<br>**Questions to panel** – Rogier Elshout<br>**AI Video** | Plenary, presenting recommendations and visions from the youth conference. |
| 17:55-18:00 | **Closing of conference** - Rogier Elshout and Jannica Haldin | Closing of conference |

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## Annex III – Feedback from post-event survey

Following the event, the organisers sent out a survey to all attendees asking for their feedback and received 44 responses.

### Did you attend the event in person or online?

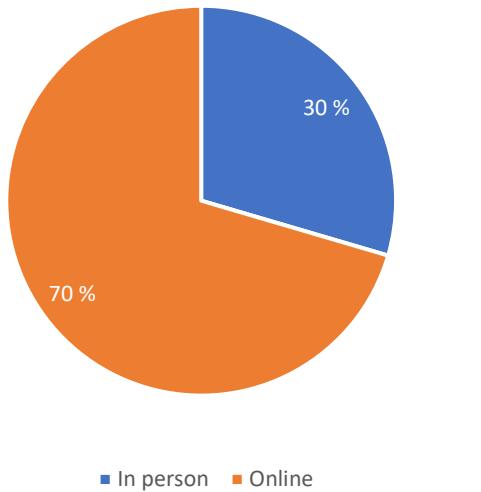31 respondents attended online, with 13 attending in person.



*Figure A3.1 – Did you attend the event in person or online? (n=44)*

### How satisfied were you with the overall organization of the event?

Attendees were asked to give a rating from 1 to 5 stars over their overall satisfaction with the organization of the event. The average rating was 3.7 out of 5.
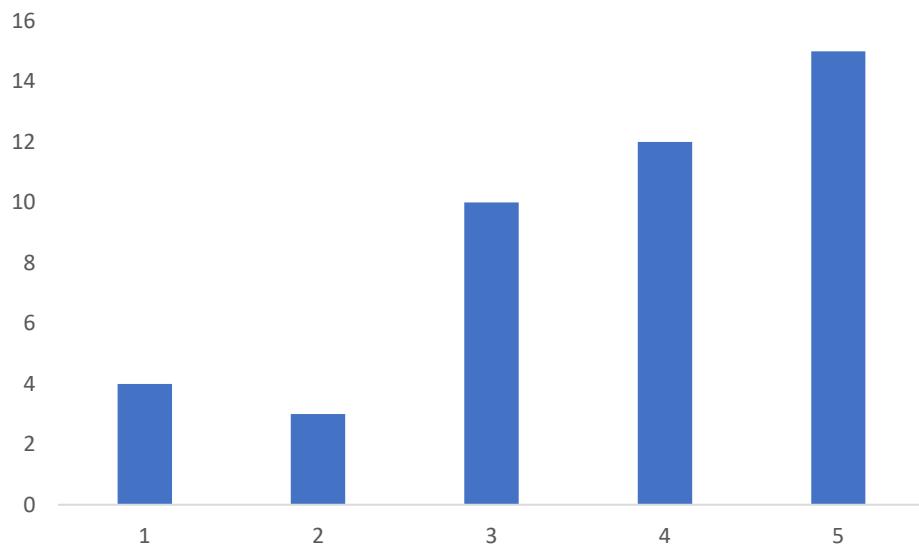


*Figure A3.2 – How satisfied were you with the overall organization of the event? (n=44)*

## How would you rate the moderation of the plenary sessions?

Attendees were asked to give a rating from 1 to 5 stars for the moderation of the plenary events. The average rating was 4.05 out of 5 stars.
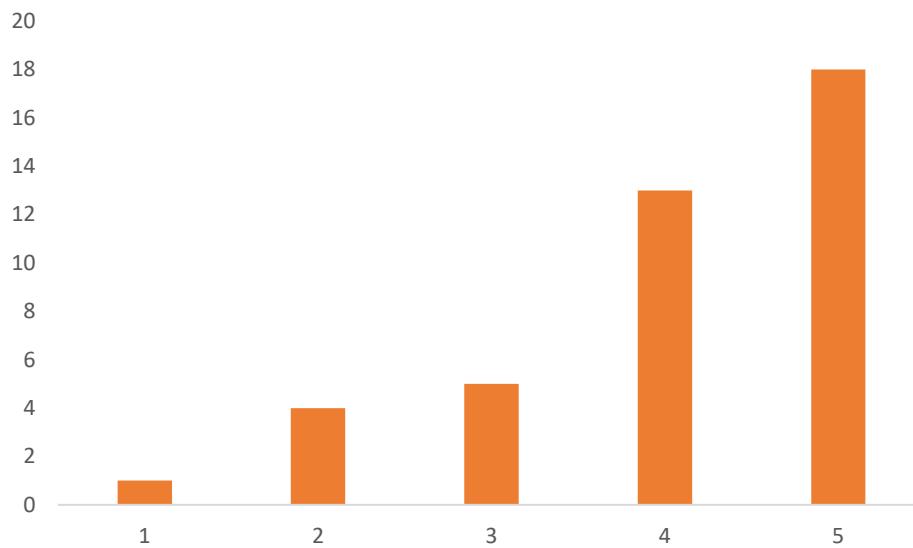


*Figure A3.3 – How would you rate the moderation of the plenary sessions? (n=41)*

## Please rate your satisfaction with the workshops you attended?

Attendees were asked to rate their satisfaction with the workshops they attended – with a rating from Unsatisfied to Satisfied. The higher rate of dissatisfaction with the management workshop is linked to technical problems faced with the online platform at the start of that workshop, not to the content or faciliation.
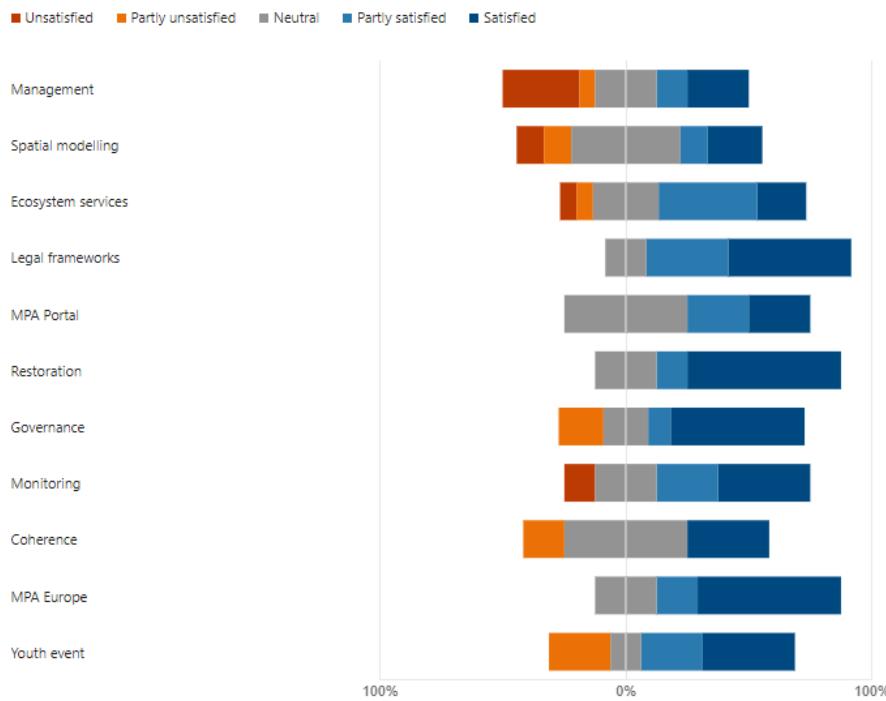


*Figure A3.4 – Please rate your satisfaction with the workshops you attended (n=41)*

## What was the highlight of the event for you?

There was a general response that attendees enjoyed the opportunity to discuss and network with people working in the field. There was praise for the moderation of the whole event, for Project Manager Jannica's opening talk at the plenary as well as the interactivity of the platforms such as Miro and Slido during the event.



*Figure A3.5 – What was the highlight of the event for you? (n=35)*

## What suggestions would you have for improving future events?

Feedback for improvement included improving the schedule so participants could move to the correct rooms more easily, technological problems faced during the workshops, ensuring that the online participants could be involved more in the live workshops, improving the usability of the online platform tool including the structure for breakout rooms, to clean the information received by email before the event and to do more to reach out to wider variation of stakeholders. The youth participants would also have appreciated being able to attend in-person.



*Figure A3.6 – What suggestions would you have for improving future events? (n=35)*

## Any additional comments or feedback?

Further positive comments from respondents remarked that they enjoyed the venue and location, that the topics were inspiring and gave them food for thoughts, that the event in-person was well organized and that they enjoyed being able to exchange information with participants. Drawbacks mentioned included technical issues with the online platform, specifically for the management workshop, missing stakeholder groups, a worry that the event and possibly the project will not go beyond the conceptual level, and issues with receiving registration confirmations.

*Figure A3.6 – Any additional comments or feedback? (n=22)*

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## Annex IV - Responses to the Governance workshop questions

The same colour coding that was given for the post-it notes in the Governance section is used here to elaborate on the responses given, since in the images the responses are not always clear. In this Annex the information from both the in-person and the online workshop has been merged for each question posed in the workshop. Online input is presented in italics, whereas in-person input is presented in standard font for each question.

## Key used to denote sector

| |
|---|
| Civil society |
| Research and academia |
| International governing body |
| National governing body |
| National implementer |
| Service sector |
| Industry |
| *Online Workshop input* |
| On-site Workshop input |

## What are important components of good governance?

| |
|---|
| *Long term thinking. We can't govern the seas with short sighted thinking.* |
| *consistency* |
| *Transparency* |
| *controlling* |
| *Power to the species of the Baltic Sea!* |
| *Democracy is relevant for ecosystem governance* |
| *Information sharing between different countries* |
| *with the participation or input of relevant stakeholders* |
| *clear and feasible goals* |
| *Including different interest groups in decision making (e.g. civil society, small scale businesses, interest groups)* |
| *Considering social sustainability as well as ecological* |
| *money!* |
| *political will* |
| *Empathy* |
| *Long term thinking* |
| *legitimacy* |
| *Fairness* |
| *Transparency* |

| |
|---|
| *transparency* |
| *accountability* |
| *continuity between gathering events* |
| *understanding of long term and short term goals* |
| *long term perspectives* |
| *accountability: actors holding responsibility can be help accountable for actions within this responsibility* |
| *proper means to moderate discussions/negotiations to ensure equitable participation* |
| *Democracy* |
| *No silo thinking* |
| *Inclusion* |
| *addressing and recognizing asymmetries in power between stakeholders* |
| *participation* |
| *connected networks and institutions* |
| *Precautionary management* |
| *evidence-based decisions* |
| *evidence* |
| *FAIR multi-disciplinary data on marine and freshwater domains* |
| *Define a common terminology to make sure you speak about the same things and also gives you the possibility to summarize on a national level. Or why not on an international level!* |
| *transparency and mutual respect* |
| *Collaboration* |
| *resources* |
| *Knowledge, understanding and the ability to interact between levels in the society* |
| *clarity* |
| *knowledge* |
| *Good governance should provide clear objectives, objective measurement methods* |
| *Good governance should use objective measurement methods* |
| *Good governance should provide infrastructure to store the data collected to enable review, auditing and effectiveness checks* |
| Planning |
| Integrated (transboundary, representative) |
| Adaptable (to new science, new stakeholders, new environments...) |
| Accountable - transparent |
| Communication between partners |
| Ensures proportionality |

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| |
|---|
| Evolving with needs (adaptive) |
| Transparency |
| Transparency |
| Interaction with stakeholders |
| Co-management |
| Collaboration |
| Adaptability |
| Adaptive |
| Cross-sectoral cooperation and stakeholder engagement |
| "right" science and advice, clear legal mandates, cross-sectoral structures |
| clear trade-off choices |
| Transparency |
| Communication and buy-in |
| Purpose (needs to be kept in mind all the time) |
| Balance between using and preserving |
| All stakeholders on board |
| Data |
| Common goals |
| Framework |
| Transparency |
| Listening to others |
| Collaboration |
| knowledge |
| Clear targets and goals |
| Long term |
| Communication |
| Collaboration across governance levels |
| Resources |
| Reliable, accessible data |
| Connecting different scales |
| Information in due time |
| Transparency |
| Accountability & transparency |
| Long term |
| Inclusiveness and representativity |
| Respect |
| Trust |
| Setting goals |
| Prioritisation |

The courage to make trade offs between conflicting interests

Realising when dialogue is going nowhere

Freedom under framework/policy/principles

Clear roles and responsibilities

Monitoring, evaluation and learning

Clear legal framework

Strong buy-in

Attainable, measurable and manageable objective

A shared vision

Actual implementation of the plan

Budget

Political will

Adaptability

Deals with complexity and uncertainty

Stakeholder engagement

*utilize an adaptive management approach throughout the governance process*

*Species Ambassadors from Civil Society*

*If we do not want to share any power with other species we should not talk about democracy and sustainability.*

*Thinking about implications for future generations*

*Politicians including different interest groups at the start of projects*

*poly-centric governance*

*co-management committees*

*adaptive cyclical process - define objectives, gather evidence, make decisions, review start again*

*I believe adaptive management is important here. The method Open standard can be useful!*

*Important with an open process and possibilities for countries to interact*

*From the Baltic sea ecosystem perspective there are no boarders between countries. So governance should move free over boarders.*

*Analyze what we have protected in the Baltic today, what is missing? And where?*

*Define biological targets in the Baltic and set protection objectives for each of them. Including connectivity.*

*collaboration*

*Good governance should provide clear objectives, objective measurement methods*

*Good governance should provide infrastructure to store the data collected to enable review, auditing and effectiveness checks*

> *Governance should allow for developing granularity of reporting over time, making improvements when more data is available or progressive insights.*

## Mapping strengths of current governance approaches and prioritising the strongest strength through voting

| | |
|---|---|
| *Provide opportunities to try something new regarding species relations* | |
| *bottom-up approach more heavily used with stakeholder dynamics* | |
| *when MPAs have a dedicated governance (governing body for example) it's already a success!* | *2* |
| *recognition that top-down governance is not enough* | |
| *increasing awareness of social and environmental stakes* | *1* |
| *Potentially common goal* | |
| *we have and share data* | |
| *more and more examples of co-management and better inclusion in decision making* | *1* |
| *willingness for cooperation* | |
| *Willingness for cooperation and reaching a good protection of the Baltic Sea* | *9* |
| *The framework that is being implemented in Sweden* | |
| *Climate change awareness and species collapse have increased the importance, enforceability, and relevance of recent MPA governance,* | *1* |
| Solid science | 1 |
| Goals and targets | 1 |
| Cooperation framework | |
| Regional cooperation | |
| Regional cooperation | 8 |
| Legal framework | |
| Understanding the challenges | |
| Possibility for inclusion and collaboration | |
| We have a plan in place! | |
| Necessity to work for same vision (GBF 30x30) in the Baltic | |
| National collaboration over scales | |
| Some MPAs exist | 3 |

## Mapping weaknesses of current governance approaches and prioritising the weakest weakness though voting

| | |
|---|---|
| *Political opposition because many people feel excluded from a protection regime* | 1 |
| *Not enough protection for threatened ecosystems* | 1 |
| *many MPAs don't have an individual governance system (e.g. no committee)* | 1 |
| *Often siloed from other policies and institutions* | 1 |
| *Sector fragmented governance & management* | 5 |
| *Time unbound objectives* | |
| *difficulty in considering different perspectives and interests* | |
| *MPA designation, MSP and land use gov. do not speak. Parallel processes* | |
| *poor participation: lack of true and legitimate participatory approaches* | 2 |
| *top down* | 2 |
| *Management plans only control activities in the area. Pressures outside the area persist and are the most significant* | |
| *capitalistic and neoliberalism values driving decisions* | |
| *Better cooperation among stakeholders and cross border is needed* | |
| *Today we don't have a definition of how an optimal protected network of marine areas would look like. What shall it contain and how much?* | 4 |
| *We don't have a common frame work for our common work to protect the Baltic* | 3 |
| *Most systems have their foundation in commercial activities, ignoring the ecosystem as a whole, just focus on specific commercial species that can be sold* | |
| *MPA being used for commercial purposes, killing off competing techniques that are more environmentally friendly* | 2 |
| Lack of share understanding (lack of trust) | |
| Resources | |
| Lack of resources | |
| Unclear limitations | |
| Rigid, top down, management | |
| Nature seen as a sector among others | |
| Lack of political will | |

| | |
|---|---|
| Lack of resources | |
| Lack of resources | |
| Resources and time | |
| Management in silos and sectoral interests | |
| Not weighing trade-offs | 1 |
| Economic interests prevail | |
| Short term thinking | |
| Lack of budget | 2 |
| Complex as hell | |
| Lack of prioritisation from national arena | 1 |
| Not covering high biodiversity areas | |
| Economic interests override protection | 2 |
| Different goals | 5 |
| Not enough data | |
| Not enough resources | |
| Not all stakeholders onboard | 3 |

## If there were no restrictions, how would you improve MPA governance?

| |
|---|
| *help interpret and make alive certain legal frameworks* |
| *open platforms or forums to discuss regularly* |
| *aim for community-led approaches on governance* |
| *Make it a democratic system, based on species representation* |
| *periodic evaluation (learning outcomes)* |
| *Marine protected area/network centred multiscale truly inclusive /participatory science -based governance* |
| *science-based policy* |
| *more social sciences :)* |
| *Use a precautionary approach for setting up MPAs and ensure they are well managed through co-management processes* |
| *Climate resilient connected Baltic wide MPA network managed through an ecosystem approach objectives* |
| *governing bodies for ecological units* |
| *respect* |
| *Collect more evidence on spillover effects and species-specific information* |

| |
|---|
| *each MPA has its managing body* |
| *cooperation on different levels of governing process is very effective and transparent* |
| *holistic approach is implemented all pressures are defined and ways how to mitigate them* |
| *Cross-border cooperation on similar measures/ideas for adjacent MPAs* |
| *More resources* |
| *Outreach to the public* |
| *Complete knowledge of what exists underneath the surface in the Baltic Sea  :)* |
| *Measures to handle/'take care of' old sins like toxins in the sediments...* |
| *Cross-borders management office and regular evaluations and setting of new goals and objectives.* |
| Constant clear communication |
| Clear agreed targets |
| All sectors and stakeholders working together |
| Use and protection in balance |
| Flexibility in changing the plan when needed |
| Inform the general public on the need for governance ->education |
| Build trust and understanding by reconciling objectives |
| Make everyone understand and act according to the fact that without nature, water, environment etc. we would not be here |
| Increase funding for MPA network development |
| More resources (staff, money etc) to governance bodies to enable good governance |
| An overarching policy to clarify -mandates, -same targets, - priorities and limits |
| Strengthen legal obligations of protection targets |
| Set up more specific targets in biodiversity segment of the BSAP, like for nutrients |
| Shift science towards wider ecosystem considerations for advice, trade-offs etc. |
| Re-organise/reframe to make "cross-sectoral" the new normal |
| Revise the convention: integrate EBM as one of the fundamental principles |
| Play this same [workshop] with policymakers at the Ministerial Meeting |
| Faster decision making |
| Brainwash politicians and people |
| Socio-economic analysis showing the cost of inaction |

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| |
|---|
| Communication, communication, communication |
| Simplify the why -> sharpen arguments |
| Awareness raising |
| More ecological data |

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