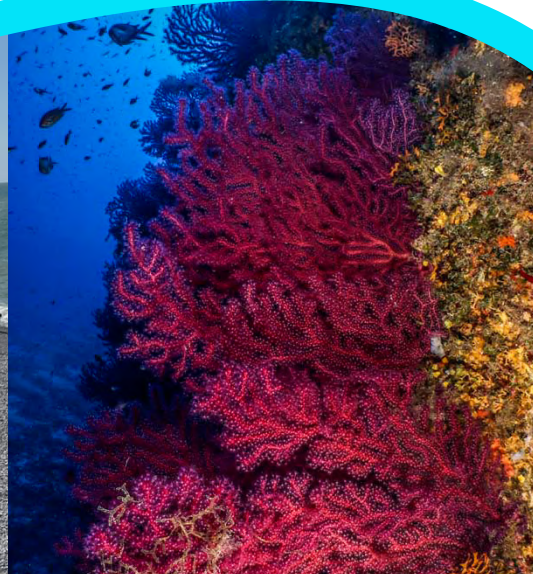


Experiences from marine protected area governance and management in action

CASE STUDIES FROM THE BLUE4ALL TOOL TESTING AND VALIDATION PROCESS



Fattebert C., Arda Y., Scanu S., Buitendijk T., Schuitema G., Sicard M., Carballo Cardenas E., Louwette J., Frau F., Congiu M., Masala V., Cadoni N., Chapot C., Watt L., Caroppo U., Muscogiuri L., De Franco F., Storsjö I., Drews-Von Ruckteschell F., Perschke M., Salomonsen X.M., Putnik A., Nurkse K., Barboza F.R., Van Oijstaeijen W., Rumes B., Latte R., Van Schoubroeck S. (2025) Experiences from MPA governance and management in action – Case studies from the BLUE4ALL tool testing and validation process. Deliverable – D5.2 of the BLUE4ALL project (GA n° 101094014)".

ABOUT BLUE4ALL

Blue4All is a Horizon Europe Mission Ocean project that addresses marine conservation and restoration challenges across Europe. In collaboration with MPA managers and stakeholders from 14 MPAs (Living Labs), the project is testing and developing practical tools to support the protection and recovery of the marine environment in a socially just way. The tools are brought together in a user-friendly MPA Solutions Hub to support the design and management of effective, efficient, and resilient MPAs and MPA networks. From spring 2024 to fall 2025, Blue4All researchers actively tested many of these tools - including software based decision-support tools, workshops, awareness campaigns, Excel-based resources, and guidebooks - by applying them to different Living Labs across Europe. The following publication summarises the main tools that were tested and the specific activities that took place in each Living Lab.

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ACRONYMS

MPA	Marine protected area
NEAT	Non-indigenous species Effect Assessment Tool
NGO	Non-governmental organisation
NIS	Non-indigenous species
OFB	Office français de la biodiversité (French Office for Biodiversity)
PEAR	Perception Elicitation and Awareness Raising
PW4B	PlanWise4Blue
QGIS	Quantum Geographical Information Systems
SAC	Special Area of Conservation
SEG	Stakeholder Engagement Group
SPA	Special Protected Areas

INTRODUCTION

This booklet brings together a set of case studies that showcase practical experiments using ecological, socio-governance, and financial tools to respond to concrete management needs in marine protected areas (MPAs). All the tools featured here will be accessible via the Blueprints platform. Some were already available within the global MPA conservation toolbox, while others were developed or adapted by Blue4All partners.

Each case study tells a story from the field. It shares hands-on experience, lessons learned, and practical recommendations for applying a specific tool, or a combination of tools, in real-world settings. As a platform user, you may be looking to understand how a particular tool has been used elsewhere, what expectations guided its implementation, and what results were achieved.

This booklet was produced as part of Blue4All, a Horizon Europe Mission Ocean project that addresses marine conservation and restoration challenges across Europe. Working closely with MPA managers and stakeholders from 14 Living Labs (MPAs and MPA networks) in the Mediterranean, Baltic, and North-East Atlantic, the project has tested and developed practical solutions to support marine protection and recovery in a socially just way.

The tools presented cover a wide range of formats, including software-based decision-support tools, facilitated workshops, awareness-raising campaigns, Excel-based resources, and guidebooks. In this booklet, you will explore nine case studies that span ecological, social, and socio-economic objectives and activities.

We hope these case studies support shared learning and inspire action.

ACKNOWLEDGEMENTS

We would like to heartily thank every case study contributor, reviewer, and editor who shared their knowledge and expertise during the interviews and the review process of each case study.





TOOL

Facilitated Discussion Groups

Facilitated discussion groups offer a qualitative, conversation-based format that brings together different MPA stakeholders to exchange views on issues related to the protected area, drawing on their own knowledge, experiences, and values. Discussions are guided by a moderator, who may be an MPA manager or an independently appointed facilitator.

The aim of these groups is to foster sustained, open dialogue with stakeholders over time, embedding regular exchange and reflection into the MPA management cycle.

CASE STUDY

Dundalk Bay, Ireland

TOMAS BUITENDIJK, UNIVERSITY COLLEGE DUBLIN, IRELAND
GEERTJE SCHUITEMA, UNIVERSITY COLLEGE DUBLIN, IRELAND

RATIONALE FOR SELECTING THE TOOL

Drawing on baseline assessment data from marine protected areas (MPAs) across Europe, we observed that managers of Special Areas of Conservation (SACs) and Special Protected Areas (SPAs) tend to involve stakeholders primarily during the planning and designation phases. Once sites are formally implemented, interaction with stakeholders often becomes far more limited.

In Ireland, MPAs are not yet formally recognised in legislation, but SACs and SPAs are in place and subject to environmental protection regulations. These sites are managed by different entities, and Dundalk Bay—designated as a Natura 2000 site—supports a wide range of activities and user groups.

Currently, stakeholders lack a central point of contact or a shared space where they can meet, discuss issues, exchange perspectives, and contribute to ongoing decision-making about the bay. This situation makes it challenging for stakeholders to raise concerns or engage meaningfully in management processes.

We therefore identified the creation of a shared “table”, where stakeholders from different groups could come together, as a simple yet essential first step towards a more inclusive and structured engagement process. This approach is particularly relevant as Ireland moves closer to decisions on the formal establishment of MPAs.

IMPLEMENTATION APPROACH

Facilitated discussion groups are a well-established approach for engaging stakeholders in MPA governance and can be adapted in many different ways. To make the most of this method, we first defined a clear process tailored to our local context and objectives.

We implemented the approach in two phases over a period of approximately four months. During the first phase, we focused on open, unreserved discussions within individual stakeholder groups. These conversations allowed us to better understand who the stakeholders were, where they came from, how they used and valued the bay, which aspects of existing legislation they supported or questioned, and what recommendations they had for managing the area. In total, we held nine separate discussions with representatives from the community, local and national government, and industry.

The second phase brought one representative from each stakeholder group together in an online discussion (with all groups from the first phase participating, except two). After brief introductions, we guided the group through a focused exchange on the key opportunities and challenges that had emerged during the first phase.

Overall, holding stakeholder discussions regularly throughout the MPA establishment process proved to be essential. These exchanges helped build strong relationships, encourage dialogue across sectors, and work towards shared understanding and consensus. They also gave MPA managers clearer insight into stakeholders' priorities and concerns. At the same time, facilitated discussions helped reduce potential conflicts that could otherwise slow the management process and laid the groundwork for more technical work, such as spatial planning using GIS data or co-creation activities for MPA design and management.



RESULTS AND IMPACT

During the first phase, we facilitated discussions with nine different stakeholder groups, engaging a total of 25 participants. In the second phase, eight representatives from these stakeholder groups took part in the facilitated discussion group.

As part of the process, we also explored the concept of “path dependency”, which refers to how stakeholders make livelihood-related decisions within existing legislative constraints, historical developments, and traditional patterns of marine resource use. The facilitated discussions generated valuable qualitative insights that supported our research on these dynamics.

In addition, the discussions allowed us to gather stakeholders' recommendations for the management of the bay. A key message to emerge was the need for an MPA manager or a central coordinating body, or at minimum a dedicated forum where stakeholder groups can meet and exchange views. This recommendation will be passed on to the Irish government authority responsible for initiating the MPA network designation and related legislation.

Stakeholders also raised two additional major concerns. One related to the management of fishing activities. Most fishers expressed a preference for maintaining the status quo, as they were concerned about the potential impacts of new regulations on their livelihoods. In contrast, non-fishing stakeholder groups highlighted their concerns about the effects of fisheries on the natural environment. Sanitation issues were another recurring topic, for example in relation to housing developments around the bay.

While it is not within our mandate to define the governance structure for the current MPA legislation and designation process, we will share the recommendations expressed during this facilitated discussion group with the Irish government. This input can help inform future discussions with stakeholders on the management of Dundalk Bay.

RECOMMENDATIONS FOR PRACTITIONERS

- We recommend that users invest time in organising both phases of the process. The first phase is particularly valuable for learning, listening, and openly discussing stakeholders' perspectives. Some views or concerns may be easier to express within homogeneous groups and may not be shared as openly in a mixed setting. This phase also allows the facilitator to gain a clear understanding of what is at stake for each group, which is essential for preparing and guiding the second phase of discussions. Having multiple voices from the same stakeholder group during the first phase helps ensure that a diversity of perspectives is heard. For the second phase, it is advisable to limit participation to one representative per stakeholder group; larger groups quickly become difficult to manage and discussions tend to favour the most outspoken participants.
- Facilitated discussion groups will have greater impact when they involve relevant authorities and are clearly embedded within a decision-making chain. This makes it possible to translate the group's recommendations into future management decisions. An MPA manager should integrate these discussions into the broader management cycle and consider holding them once or twice a year. Whenever possible, in-person meetings are the most productive, as they allow time for informal exchanges and relationship building. These elements play a crucial role in sustaining long-term stakeholder engagement.
- Finally, it is recommended to involve a professional facilitator, at least for the initial sessions. A facilitator who is perceived as neutral and independent from stakeholder interests is more likely to foster balanced exchanges and help manage conflicts or sensitive debates, leading to more constructive outcomes.





TOOL

Perception, Elicitation and Awareness Raising (PEAR) toolset

The Perception Elicitation and Awareness Raising (PEAR) tools identify stakeholder perceptions and awareness of an MPA. Understanding these perceptions supports stakeholder collaboration, enhances equitable benefit sharing and helps maintain local support (Bennett, 2016). The PEAR tools elicit perceptions across the four dimensions outlined by Bennett (2016): i) the scale and fairness of MPA social impacts; ii) ecological outcomes and related community benefits; iii) governance legitimacy; and iv) social acceptability of conservation management and regulations.

PEAR is a toolset involving four methods: i) online surveys and interviews to elicit awareness and perceptions; ii) posters or flyers to encourage participation and support mutual awareness raising; iii) and a joint evaluation of implementation. Target groups depend on context and may include fishers, tourism stakeholders, residents, and officials. The evaluation may involve internal reflection by MPA managers or external activities, such as workshops or public presentations, to share results and co-create initial steps for applying the findings.

Central to the PEAR toolset is the recognition that awareness raising should be reciprocal: it not only informs stakeholders about the potential benefits of the MPA but also provides MPA managers with insights into stakeholders' perspectives and concerns.

In the Littoral Seino-Marin, selected tools out of the PEAR toolset were implemented successfully: the survey among the local population and semi-structured interviews with local authorities.

CASE STUDY

Littoral Seino-Marin, a Natura 2000 site, France

MAËLLA SICARD, FRENCH OFFICE FOR BIODIVERSITY, FRANCE

EIRA CARBALLO CÁRDENAS, WAGENINGEN UNIVERSITY, THE NETHERLANDS

JOSÉPHINE LOUWETTE, WAGENINGEN UNIVERSITY, THE NETHERLANDS

RATIONALE FOR SELECTING THE TOOL

We conducted a needs assessment with the Stakeholder Engagement Group (SEG) to better understand existing gaps and priorities. The assessment revealed a clear challenge: many elected officials and members of the public were not aware of the existence of the MPA. In addition, there was limited understanding of what an MPA is, why MPAs are important, or which regulations apply.

In response, we aimed to better understand how elected officials and the wider public perceive the MPA, while also using the process as an opportunity to share information about it. We were particularly interested in gauging respondents' willingness to engage with the MPA and exploring how they might want to be involved in the future.



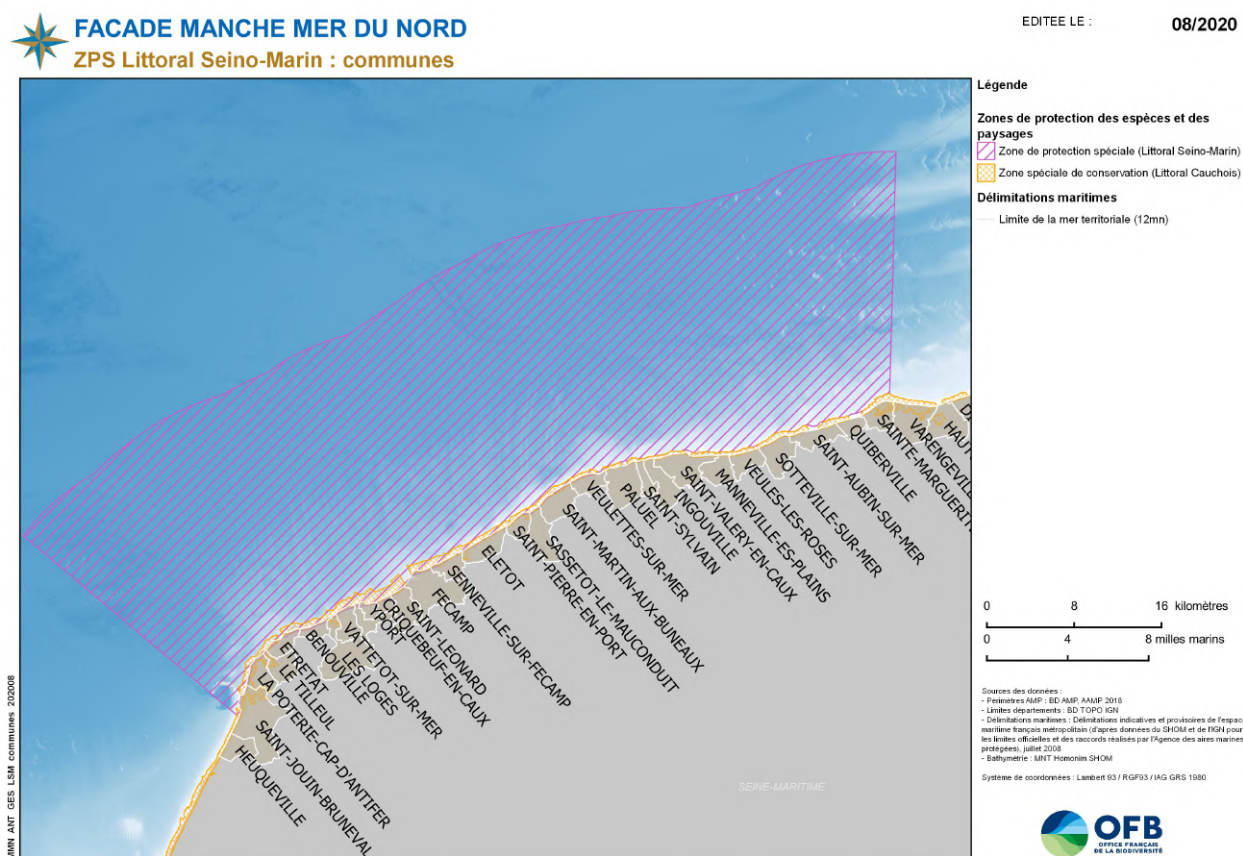
IMPLEMENTATION APPROACH

We began by drafting the questions. For the interviews with elected officials, we deliberately kept the number limited (a maximum of ten) to give participants space to share their perceptions of the MPA and describe any actions taken within their municipalities. We also set aside time at the end of each interview for open discussion, allowing elected officials to ask questions and strengthen their understanding of the MPA. To support this exchange, we shared background materials in advance, including the management plan, the species guide, and the action guide for elected officials and members of the steering committee.

For the public survey, we developed clear and straightforward questions focusing on respondents' connection to the sea, their marine-related activities, their knowledge of the MPA, and how they might be willing to engage with it.

In both cases, it was important to phrase questions simply and to anticipate the type of answers they might generate, as well as the questions respondents might ask in return. The questions were tested with different people to check clarity and completion time, and then adjusted to match the specific objectives of the communication effort and the target audience.

The second step involved contacting elected officials and disseminating the survey. We first identified contact details for elected officials and reached out to ask whether they would be willing to participate in an interview about the MPA. To promote the survey, we distributed posters and flyers featuring a QR code in shared public spaces, such as town halls and local shops. We also worked with NGOs represented on the Natura 2000 site Steering Committee to help spread the survey more widely.



RESULTS AND IMPACT

For our team, this work marked the first time we placed a strong emphasis on social dimensions. As such, it represented an important first step towards more structured outreach and long-term stakeholder engagement.

Dissemination proved to be critical for achieving a good response rate, but identifying the most effective channels was not straightforward. For example, posting information on our LinkedIn page or website was not the most suitable way to reach the general public. Timing also played a key role: sharing information just before the Christmas holidays was less effective, as people were focused on other priorities.

The dissemination process nevertheless opened unexpected opportunities. It allowed us to connect with various local offices, which suggested alternative channels such as town-hall newsletters or the tourism office website. More importantly, this process helped us build relationships with key stakeholders and created opportunities for more regular and constructive interactions.

Through the survey and interviews, we also asked participants whether they wished to stay in contact and engage further with MPA management activities. We followed up with those who expressed interest, initially to thank them for their participation, but also to discuss specific next steps. These contacts are valuable to maintain over time, and they helped us identify new joint actions, particularly related to communication and raising awareness about the MPA.

We also presented the results of the survey and interviews to policymakers (state services), providing an opportunity to share insights and formulate recommendations.

Overall, the main lesson learned is clear: while ecological work remains fundamental to MPA management, paying close attention to social dimensions is equally essential. This requires dedicated time, thoughtful planning, and sufficient resources to ensure meaningful engagement and lasting impact.



We received 18 responses to the survey from citizens living in one of the 27 municipalities concerned by the MPA, which has a total population of 38,627 residents. In parallel, we conducted five interviews with elected officials, including one individual with prior experience at the French Office for Biodiversity (OFB).

Although survey respondents were not aware of the existence of the MPA, they expressed a strong attachment to the area and described the recreational activities they enjoy there. While some supported the introduction of regulations to help preserve the site, others were more reluctant and voiced concerns about potential restrictions on their freedom of use.

Elected officials were aware of the MPA, but had limited knowledge of its objectives and regulatory framework. Several expressed a desire for stronger regulation of recreational activities and showed interest in being more actively involved in the MPA, particularly through educational initiatives.

We also identified a general lack of clarity among both elected officials and citizens regarding the mandate, roles, and responsibilities of MPA management. For example, many were surprised to learn that sectors such as fisheries are not managed by the MPA management team, but fall under the authority of other government bodies.

Although the response rate was lower than initially expected, the survey and interviews provided valuable insights into stakeholders' levels of knowledge and perceptions of the MPA. The results helped us identify what information needs to be communicated more clearly, as well as the types of outreach activities that could encourage greater involvement in MPA management.

More specifically, the findings highlighted opportunities to organise concrete awareness-raising actions together with one or more stakeholder groups. These could include outreach activities such as beach clean-ups or environmental education sessions in schools. We also identified a need to improve the visibility of the MPA, for example through on-site signage showing MPA boundaries, zoning, and the regulations that apply within the area. In addition, respondents expressed a desire for clearer and, in some cases, stronger regulation of fisheries and recreational activities, which they felt would increase the legitimacy of the MPA.



RECOMMENDATIONS FOR PRACTITIONERS

It is essential to allocate sufficient time for the entire process, including a preparatory and preliminary phase that can be relatively long depending on the resources available. Seemingly simple tasks—such as compiling email contact lists for key stakeholders or identifying appropriate communication and dissemination channels—often require significant time and coordination. In addition, developing a clear and engaging communication package to accompany invitations to participate in surveys or interviews is crucial. This material helps provide background information on the MPA, captures interest, and encourages participation.

The process can be more efficient and effective when regular communication with stakeholder groups is already in place, independently of the specific tools being implemented. For this reason, it is strategically advisable to prioritise ongoing stakeholder engagement activities and maintain regular interactions with key representatives before launching outreach surveys or semi-structured interviews with key informants.





TOOL

Participatory stakeholder engagement process for the revision of marine protected area (MPA) zones

The participatory stakeholder engagement approach, combined with QGIS, is an inclusive consultation process, backed up by scientific data and information.

The participatory stakeholder engagement approach consisted of establishing a group of stakeholder representatives and scientific experts and organising a series of workshops for consultations and decision-making.

QGIS is a free and open-source mapping and data analysis tool for spatial visualisation and decision-support.

CASE STUDY

Capo Carbonara marine protected area, Sardinia, Italy

FRANCESCA FRAU, MEDSEA FOUNDATION, ITALY
MICHELA CONGIU, MEDSEA FOUNDATION, ITALY
VALERIA MASALA, CAPO CARBONARA MPA, ITALY
NICOLETTA CADONI, CAPO CARBONARA MPA, ITALY

RATIONALE FOR SELECTING THE TOOL

The current MPA zonation, established in 2012, presents several critical limitations. Monitoring activities carried out by MPA staff over recent years have revealed inaccuracies in the georeferencing of existing zones and shown that the current zonation no longer reflects the most up-to-date biological and ecological knowledge.

As a result, there was a clear and urgent need to revise the zonation using robust scientific evidence and environmental priorities, while also taking into account socio-economic dynamics and broader political considerations.

The participatory process was designed to support a shared, transparent, and evidence-based revision of the MPA zonation. The Stakeholder Engagement Group (SEG), established through the Blue4All project, provided a structured space for openly discussing different options for a revised zonation.

Scientific information gathered by MPA staff, together with inputs from external experts, formed a strong basis for identifying ecological priorities. At the same time, the active involvement of stakeholders ensured that their needs, concerns, and practical knowledge were fully taken into account.

By combining scientific guidance with participatory dialogue, the process was able to move forward in a collaborative manner, helping to balance environmental requirements with socio-economic interests.



IMPLEMENTATION APPROACH

The process began in March 2024 with the establishment of the Stakeholder Engagement Group (SEG), bringing together institutional and local representatives. From January 2025 onwards, MEDSEA and the Capo Carbonara MPA worked actively on revising the zonation. The first step involved engaging external environmental experts with in-depth knowledge of the MPA and sharing all available scientific data and relevant materials, with the aim of building a shared understanding of the area's ecological characteristics. All data were uploaded into QGIS, and biocenotic and synoptic tables were developed and used as a starting point for discussions on the new zonation. Throughout this phase, SEG members were regularly updated and kept informed of progress.

One year later, in March 2025, the MPA hosted the first in-person meeting in a planned series, bringing together external experts and the local municipality, which acts as the MPA's management body. During this meeting, an initial zonation proposal was drafted based on the ecological status of the MPA and the distribution of habitats.

The next steps focused on the two stakeholder categories most directly affected by changes to the zonation—fishers and diving operators—for whom limited data were available regarding their specific use of the MPA, particularly in the case of fisheries. Separate, targeted workshops were organised with these groups to develop additional zonation proposals reflecting their needs. These meetings made use of printed maps of the MPA to support hands-on, practical discussions about possible changes.

MPA staff then consolidated all proposals developed to date, integrating ecological, fisheries, and diving perspectives, and discussed this comprehensive proposal with the municipality in order to incorporate political considerations. Once all inputs and feedback had been taken into account, a dedicated workshop was organised in May 2025 with all SEG members to present the resulting proposal, which reflected environmental, socio-economic, and political priorities. A printed map of the proposed zonation was again used to enable direct interaction by participants.

The proposal received overall positive feedback from stakeholders, with a minor adjustment recommended for one of the highly protected zones. This suggestion was incorporated, resulting in the final version of the proposed new zonation.

The final proposal was then presented to all local MPA stakeholders during a public workshop held in June 2025.

Throughout the entire process, all relevant spatial data were uploaded and managed in QGIS, allowing ecological, socio-economic, and political layers to be integrated and overlaid. This comprehensive geospatial analysis was essential to the development of the final zonation proposal, which reflects all key inputs and perspectives.



In July 2025, field verification activities were carried out at sea to assess the positioning of new buoys marking the highly protected zones, in line with the proposed zonation. A comprehensive report for the Ministry is currently being prepared, detailing the proposed zonation and the data collected during field activities.

The establishment of the Stakeholder Engagement Group (SEG) and its structured involvement throughout the process proved essential to ensuring both transparency and inclusiveness. The process was deliberately designed to foster a cooperative environment in which the needs and perspectives of different stakeholder groups could be discussed openly, while maintaining ecological conservation as the guiding baseline.

External scientific experts played a critical role, in particular by highlighting the ecological value of the MPA and underlining the need to strengthen protection measures.

Although no specific Blue4All tools were applied during the zonation revision process—aside from technical support tools such as QGIS and the printed maps used during meetings—the structured engagement of the SEG and the consultation of experts were central to shaping a proposal that balances environmental priorities with socio-economic considerations, while aiming for broad social acceptance.



RESULTS AND IMPACT

Environmental information and data were drawn from analyses carried out by scientific experts, based on the material collected and shared by the MPA. This was complemented by more detailed information on how fishers and diving operators use the MPA in practice, providing a clearer picture of spatial use and sector-specific activities.

This data and information formed the baseline for discussions on the revised zonation proposal, taking into account environmental priorities, socio-economic needs, and political constraints. They provided a shared, evidence-based foundation that allowed stakeholders and MPA staff to compare different scenarios and work collaboratively towards a balanced and sustainable management solution.

The participatory approach made it possible to develop a zonation proposal that balances different priorities and needs in a constructive way.

The structured involvement of the Stakeholder Engagement Group (SEG) and external experts, supported by the use of QGIS as a technical tool, proved to be a critical success factor. QGIS allowed for the production of both digital and printed maps, which played a key role during participatory workshops by offering a clear, data-driven basis for discussion and visualisation. These maps helped bridge scientific evidence and local knowledge, giving stakeholders a concrete way to explore, understand, and compare different options. The establishment of the SEG and its continuous engagement throughout the process ensured transparency and inclusiveness. A cooperative environment was created in which the socio-economic needs of different stakeholder groups could be discussed openly, while keeping ecological conservation as the guiding principle.

The final zonation proposal is the result of combined inputs from MPA staff, the municipality, external experts, and local stakeholders. It integrates ecological, social, and political dimensions, has received broad acceptance, and will be submitted to the Ministry for formal



RECOMMENDATIONS FOR PRACTITIONERS

The experience at Capo Carbonara MPA highlighted several lessons that are relevant both for this site and for other MPAs considering similar approaches:

- **Planning and timing:** Stakeholder participation and technical assessments require considerable time and careful preparation. Effective outcomes depend on long-term planning and a well-structured process established well in advance.
- **Trust and collaboration:** Building and maintaining a positive, transparent, and cooperative relationship between the MPA management team and local stakeholders is essential to achieving results that are both socially accepted and ecologically sound.
- **Accessibility of tools:** Providing user-friendly technical tools—such as QGIS outputs in simple formats and printed maps—combined with in-person workshops proved highly effective in encouraging meaningful engagement and a sense of shared ownership and ownership.

In addition, external scientific experts, although not formal members of the SEG, played an important role by highlighting the ecological value of the MPA and supporting the case for strengthening protection measures. Their contributions helped clarify the environmental characteristics and challenges of the site, enabling stakeholders to better understand that the need to revise the zonation is driven primarily by ecological priorities, and that local activities ultimately depend on healthy marine ecosystems.

All meetings and workshops were facilitated by an external moderator, which helped ensure an impartial and collaborative atmosphere conducive to open discussion and active stakeholder participation.





TOOL

Perception, Elicitation and Awareness Raising (PEAR) toolset

PEAR—Perception, Elicitation and Awareness Raising is a toolset involving four methods: online surveys and interviews to elicit awareness and perceptions, posters or flyers to encourage participation and support mutual awareness-raising, and a joint evaluation of implementation. Target groups depend on context and may include fishers, tourism stakeholders, residents, and officials. The evaluation may involve internal reflection by MPA managers or external activities such as workshops or public presentations to share results and co-create initial steps for applying the findings.

Central to the PEAR toolset is the recognition that awareness raising should be reciprocal: it not only informs stakeholders about the potential benefits of the MPA but also provides MPA managers with insights into stakeholders' perspectives and concerns.

CASE STUDY

Otranto, Italy

CÉDULIE CHAPOT, WAGENINGEN UNIVERSITY, THE NETHERLANDS
EIRA CARBALLO CÁRDENAS, ENVIRONMENTAL POLICY, WAGENINGEN UNIVERSITY, THE NETHERLANDS
LOIS WATT, BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION (HELCOM), FINLAND
SERGIO SCANU, EURO-MEDITERRANEAN CENTER ON CLIMATE CHANGE (CMCC), ITALY
URSULA CAROPPO – OTRANTO MUNICIPALITY, ITALY
LUCIANA MUSCOGIURI – EXTERNAL CONSULTANT TO THE OTRANTO MUNICIPALITY, ITALY

RATIONALE FOR SELECTING THE TOOL

The MPA of Otranto is at an early stage of implementation and involves 11 municipalities. While extensive ecological and socio-economic research has already been carried out to support its establishment, considerations related to stakeholder engagement and social dimensions remain complex and are likely to evolve over time.

To address this, we chose to focus on the tourism sector as a first step in testing stakeholder engagement tools. We conducted structured interviews with boat operators and diving centres, alongside an online survey targeting tourists. This approach allowed us to explore a sector that plays a key role in the local economy and is closely linked to the future development of the MPA.

The objective was to gather information specific to the tourism sector, in particular to better understand perceptions of the MPA creation process and the challenges associated with it. The results are intended to support the municipality of Otranto in engaging stakeholders in a more targeted and deliberate way, and to help identify effective approaches for future stakeholder involvement.



IMPLEMENTATION APPROACH

Both the survey and the structured interviews were carried out in parallel due to time constraints. Prior to launching these tools, the municipality organised an information session to introduce the initiative. A follow-up workshop, facilitated by the local authority, was then held to share and discuss the results of the survey and the structured interviews.

The survey primarily focused on respondents' awareness of the marine environment and their knowledge of the existence of the MPA. To reach a broader and more diverse group of tourists, the survey was made available in three languages: Italian, English, and French. Responses were collected directly on the beach, where participants were asked to take a few minutes to complete the questionnaire.

The structured interview questions were developed jointly with the municipality, which also helped identify an initial list of contacts. The objective was to understand how diving and boat operators perceive the MPA and its marine conservation objectives. We conducted 30-minute, in-person interviews, which were recorded, transcribed, and translated into English when necessary.

The fact that we, as tool implementers, were not affiliated with the municipality proved to be an advantage, as it helped create a neutral space for dialogue. However, language barriers occasionally posed challenges during the interviews.

RESULTS AND IMPACT

A total of 50 tourists responded to the survey over a three-week period, including seven participants who took part in testing the survey. The majority of respondents expressed interest in the MPA, the marine environment, and conservation more broadly. However, the survey results also showed that knowledge about what an MPA is and about local marine ecology was relatively limited. These findings provide useful baseline information to guide future public education and awareness-raising activities that the municipality may consider developing.

In parallel, we conducted eight structured interviews involving a total of nine participants, as two individuals took part together in one interview.

A key outcome of the interviews was that, while there was general support for the establishment of the MPA, interviewees expressed concerns about potential regulations and their impacts on business activities. Respondents showed interest in learning more about MPA regulations, enforcement mechanisms, and overall objectives. They also confirmed their motivation to be involved in the MPA process, which they generally viewed as an opportunity with positive potential for the area.



RECOMMENDATIONS FOR PRACTITIONERS

- When conducting surveys and interviews, careful consideration needs to be given to both timing and target audiences. In this case, where tourism activities are highly seasonal, operators are often unable to dedicate time to interviews during peak periods. At the same time, these peak seasons offer more opportunities to engage directly with tourists and collect survey responses.
- For the survey, approaching respondents directly on the beach proved effective. People were generally relaxed and willing to take a few minutes to participate. Offering the survey in multiple languages significantly increased participation. However, we recommend diversifying formats and dissemination locations in future, for example by displaying posters or flyers in strategic places such as information centres, tourism offices, hotels, and restaurants. It may also be useful to consider tourists' visiting patterns by nationality or age group, as well as how these groups are distributed throughout the tourism season.
- Including a prize draw or small incentive in the survey could be an effective way to further increase response rates and motivate participation.
- For the interviews, the preparatory phase of identifying and contacting potential respondents should not be underestimated. Invitations are more likely to receive a positive response when initial contact is made by someone familiar with the local context, the sector, and the individuals involved. To broaden the pool of interviewees, it is also good practice to ask participants to suggest or introduce additional contacts.
- Ensuring that interviews are carried out by a neutral person is important for collecting open and honest feedback. The authority or MPA management team can then use anonymised results to inform future consultation and engagement strategies. Language barriers should also be carefully considered. Involving someone local who can support translation and mutual understanding during interviews can greatly improve the quality of the exchange and the reliability of the information collected.





TOOL

Marine protected area (MPA) Finance Planner

The MPA Finance Planner is an Excel-based tool that supports a structured financial planning process, decision-making on resource allocations to conservation objectives and communication on financial results. It helps MPA managers to determine and secure the financial sustainability of their MPA by identifying the financial gap with a future prognosis and by suggesting alternative funding sources for the MPA.

CASE STUDY

Torre Guaceto, Italy

FRANCESCO DE FRANCO, TORRE GUACETO MPA, ITALY

SERGIO SCANU, EURO-MEDITERRANEAN CENTER ON CLIMATE CHANGE (CMCC), ITALY

ISABELL STORSJÖ, FINNISH ENVIRONMENT INSTITUTE, FINLAND

FRANZISKA DREWS-VON RUCKTESCHELL, SUBMARINER NETWORK FOR BLUE GROWTH EEIG, GERMANY

RATIONALE FOR SELECTING THE TOOL

We selected the MPA Finance Planner because it brings together, in a single tool, the essential elements needed for a coherent and realistic financial planning process. It provides a clear overview of how financial and human resources are currently used in MPA management and helps identify funding gaps in a structured and systematic way. The tool was designed to make financial information easier to interpret and communicate, allowing managers to present their financial situation, needs, and priorities in a clear and visually accessible manner to both decision-makers and the wider public.

We chose the tool in response to the limitations identified in earlier financial planning tools reviewed during the project. While these tools addressed specific aspects of financial planning, none covered the full process. The Finance Planner builds on their strengths while overcoming their limitations, offering a more complete workflow that supports assessing financial health, evaluating feasible financing mechanisms, and developing a long-term financing strategy.

In addition, the planner supports dialogue within MPA management teams and with authorities by generating clear outputs that can be used to justify resource needs, communicate management results, and explore realistic options for diversifying funding sources. Its structured and intuitive design encourages a more strategic, forward-looking approach to financial planning, making it a practical and adaptable tool for strengthening financial sustainability across MPAs with different governance arrangements and levels of maturity.



IMPLEMENTATION APPROACH

The MPA Finance Planner is an Excel-based tool that guides management teams through a structured financial planning process. We started by clearly defining the ecological and management objectives the MPA aims to achieve. This step anchored the financial analysis directly to the site's conservation priorities and ensured that financial discussions remained purpose-driven.

We then compiled all available financial data and organised them according to the cost and revenue clusters provided by the tool. This involved structuring information on staff time, operational expenses, monitoring and enforcement costs, investments, and other expenditures into a coherent framework. Once we entered these data, the tool automatically produced a clear and visual overview of the MPA's financial situation, including the existing funding gap.

The tool also includes an important step that helps MPAs identify potential financing mechanisms and explore options to diversify funding sources. In the case of Torre Guaceto, however, we used this step for a different purpose. As the MPA already operates within a robust and effective financial framework, our main objective was to assess whether the mechanisms highlighted by the tool aligned with existing practices. This comparison enabled the team to confirm consistency between current approaches and the tool's recommendations, identify any remaining gaps, and use the outputs to communicate financial aspects more clearly with stakeholders, while opening discussions on possible long-term improvements.

Finally, we presented the results in a simple and accessible format. This made it easier for the management team to interpret the findings and provided a strong basis for informed discussions on how to further strengthen the long-term financial sustainability of the MPA.



RESULTS AND IMPACT

The MPA Finance Planner helped us clearly demonstrate how effectively we manage both human and financial resources. By linking financial results with conservation outcomes, we were able to present a more complete picture of MPA performance that connects investments directly to management results.

The tool strengthened transparency by clearly showing where funding comes from and how resources are allocated across different management operations and activities. It helped us identify areas where investment is already strong and where additional effort is needed, particularly in human resources. In our case, the planner clearly highlighted the share of funding generated through self-financing initiatives, such as parking fees and beach-related activities.

Using the tool also encouraged internal reflection on our organisation's capacity to plan, manage, and allocate human and financial resources in an effective and strategic way.

When analysed alongside ecological results, the Finance Planner allowed us to assess whether current investments in funding and staff capacity are adequate, or whether gaps remain that need to be addressed. Beyond the site level, the tool could also support discussions at the MPA system level, enabling comparisons among sites and helping inform national or regional debates on priorities for allocating human and financial resources.

RECOMMENDATIONS FOR PRACTITIONERS

- We use the MPA Finance Planner to support the development of a long-term financial strategy for the MPA. The tool helps us look beyond existing cost structures and funding sources by also exploring opportunities to introduce additional financing instruments and build new revenue streams.
- From Torre Guaceto's perspective, while the Ministry already provides decision-support tools, the MPA Finance Planner stands out for its simplicity and clarity. We found it particularly useful for demonstrating results and increasing transparency around how resources are managed. This, in turn, helps strengthen trust among local stakeholders, supports compliance with regulations, and reinforces the shared value of the MPA.





TOOL

Expert-based Ecosystem Service Assessment

The Danish Wadden Sea management team, together with the University of Southern Denmark, has developed an Expert-based Ecosystem Service Assessment tool.

The Expert-based Ecosystem Service Assessment tool is a Sankey flow diagram that shows impacts from climate change and other induced changes in the environment on specific species and ecosystems. It is built on data provided by experts from diverse areas of knowledge, supporting visualisation of different kinds of pressures and their effects on species and ecosystems.

CASE STUDY

Danish Wadden Sea, Denmark

MYRIAM PERSCHKE, UNIVERSITY OF SOUTHERN DENMARK, DENMARK
XENIA M. SALOMONSEN, NATIONAL PARK WADDEN SEA, DENMARK

RATIONALE FOR SELECTING THE TOOL

The Danish Wadden Sea forms part of the wider Wadden Sea system, which extends southwards from Skallingen in western Denmark along the German North Sea coast and into the Netherlands as far as Den Helder. In Denmark, the northern section of the Wadden Sea is particularly affected by human pressures. A wide range of stakeholders are interested in using this area, placing significant stress on the environment. For this reason, we chose to focus our efforts on this part of the Danish Wadden Sea.

The challenges affecting the area are diverse and interconnected. They range from climate change to land-based activities such as infrastructure development, including harbour expansions, dredging, and nutrient runoff from agriculture. Additional pressures originate at sea, for example from maritime transport and fisheries. We therefore needed a tool capable of visualising, in a holistic way, how these different pressures interact with the natural environment and how they collectively affect the area.

In this context, we looked for a tool that could help us make informed decisions about where to focus our efforts and which initiatives to prioritise. Just as importantly, we needed a way to clearly communicate the significance of specific issues in the area, in order to demonstrate their relevance and support efforts to secure additional funding for research and conservation activities.



IMPLEMENTATION APPROACH

We decided to prioritise our work on two species that are emblematic of the Wadden Sea: dwarf eelgrass (*Nanozostera noltii*) and the dark-bellied brent goose (*Branta bernicla bernicla*). We selected eelgrass because it is a key habitat-forming species. Although it has historically been abundant, national monitoring data show that it has disappeared from many areas of the Danish Wadden Sea. In addition, the Wadden Sea is internationally renowned for its migratory birds, and the brent goose is a flagship conservation species that uses the area during both autumn and spring migration. One of its main food sources during these stopovers is eelgrass.

We aimed to demonstrate how these two species depend on multiple ecosystem components to fulfil their ecological roles, and how the functions they perform, in turn, support ecosystem services that benefit people. Through this ecosystem services assessment, we sought to illustrate the complexity and interlinkages of the broader ecological system, as well as how changes driven by environmental pressures affect not only ecosystems but also social systems. Our objective was to produce clear visual outputs, in the form of Sankey flow diagrams, that could be used for both communication and decision-making.

We began by reviewing the scientific literature to gather information on pressures, ecosystem components, functions, and ecosystem services linked to the two focus species. In parallel, we identified and approached experts who could contribute to the elicitation process.

Based on this work, we developed lists of components, functions, services, and pressures associated with dwarf eelgrass and the brent goose. We then conducted two separate expert interviews to validate these lists and to define the relationships between them. Using a scorecard approach, we established linkages between ecosystem components, functions, and services, as well as the pressures affecting each component.

We compiled the expert scores into a dedicated database and subsequently organised group discussions with the experts to refine the data and resolve any inconsistencies. Finally, we produced the Sankey diagrams based on the aggregated results of these discussions. The resulting diagrams will be shared with the experts for final validation.

At present, we are developing a simple interface that will allow users to explore how different pressure scenarios influence the delivery of ecosystem services.



RESULTS AND IMPACT

We developed a sensitivity network that illustrates how different pressures affect ecosystem components and, in turn, influence ecological functions and ecosystem services. We translated this network into a flow diagram that visualises how the contribution of individual components and functions to ecosystem service delivery changes when associated pressures increase or decrease. The result is a clear visual representation of how social and ecological systems are interconnected, and how sensitive these linkages are to changes in the ecological system.

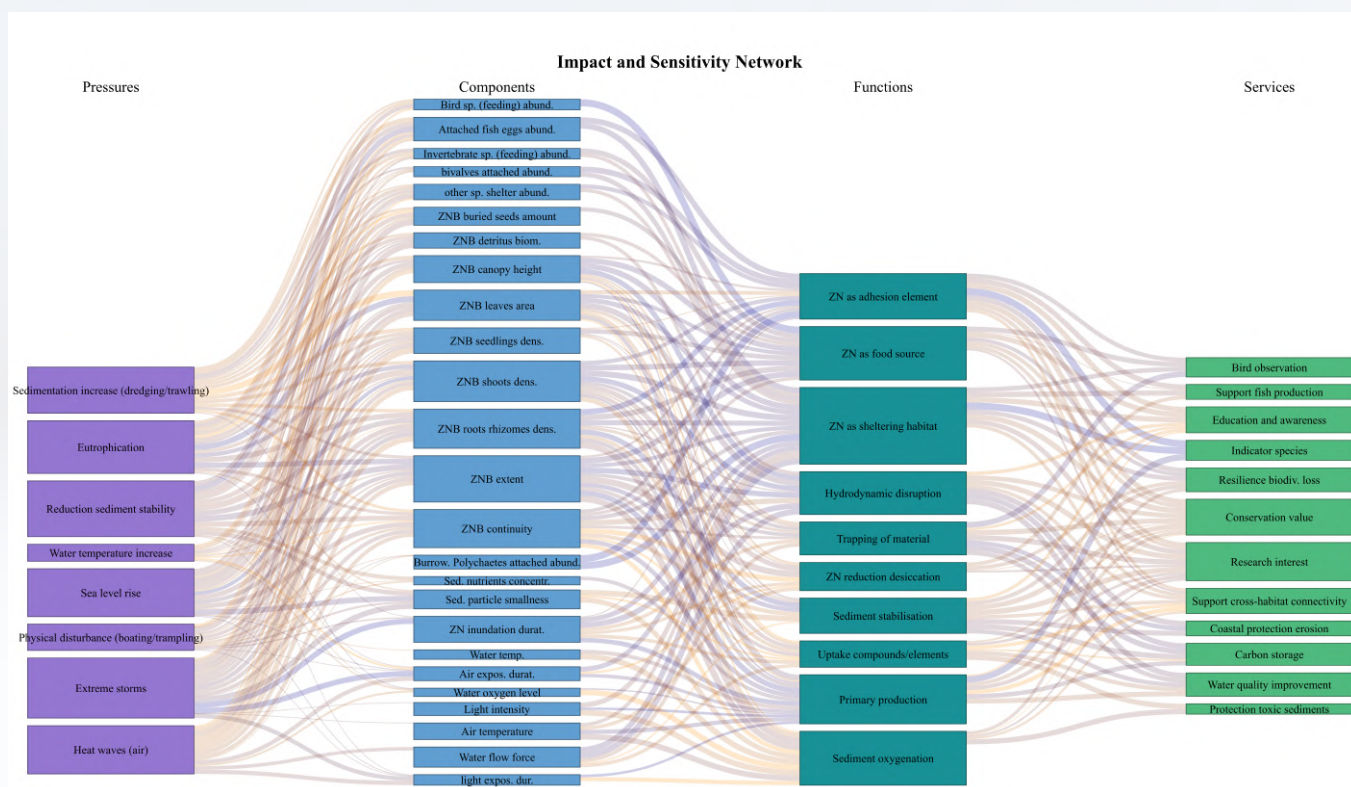
The tool allows us to illustrate overall trends and explore different pressure scenarios, showing what may be gained by mitigating pressures or what could be lost if pressures intensify. We are currently building an interactive interface based on this dataset, which will display in real time how ecosystem service delivery and the flow diagram itself respond to varying pressure intensities. This interface will support decision-making and collaboration within MPA management teams and associated boards and committees, and it also holds strong potential as a tool for communicating scientific knowledge to the wider public.

In this context, the tool helps demonstrate the importance of the presence and condition of key ecological components for focal species. It also highlights the role these species play within the ecosystem and the benefits they provide for human well-being. As such, the outputs can support more strategic and holistic planning of protection measures, leading to greater and more targeted impacts.

The process also helped keep discussions among experts and MPA management team members dynamic and forward-looking. By addressing both ecological and social systems, the assessment encouraged experts—who often focus on specific species or taxonomic groups—to engage more deeply with social dimensions such as ecosystem services and human pressures.

Overall, while the process was intensive, it proved highly productive. It resulted in engaging visual outputs with multiple possible applications, ranging from decision-support and stakeholder dialogue to science communication and awareness-raising.





RECOMMENDATIONS FOR PRACTITIONERS

- We recommend planning the entire process over a period of at least one full year. In our experience, it is essential to begin with a thorough review of the scientific literature, which lays the foundation for subsequent expert elicitation and analysis.
- We also advise involving experts from diverse disciplinary backgrounds. This ensures access to a broader range of knowledge and data related to the species under consideration, and it strengthens the robustness of the assessment.
- It is equally important to have sufficient ecological background expertise within the project team. This enables meaningful dialogue with experts during interviews, helps ensure a full understanding of their concerns and arguments, and supports rigorous analysis of the qualitative data collected for the assessment.
- In our work, we anonymised experts' responses in the raw data and final diagrams. However, it is worth considering co-authoring a scientific publication with the experts who contribute to data collection, analysis, and interpretation. Such collaboration can serve as a strong incentive for sustained engagement and may increase the likelihood of involving a larger number of experts throughout the process.





TOOL

PlanWise4Blue (PW4B)

PlanWise4Blue (PW4B) is a cumulative impact assessment tool that evaluates the single, additive, and interactive effects of human activities and pressures on nature values. Moving beyond prevailing expert-based approaches, its algorithm draws on the best available scientific evidence to quantitatively estimate both individual and combined impacts on relevant nature values.

CASE STUDY

Väinameri and Väike Vän, Estonia

AGNES PUTNIK, ESTONIAN ENVIRONMENTAL BOARD, ESTONIA

KRISTIINA NURKSE, ESTONIAN MARINE INSTITUTE, UNIVERSITY OF TARTU, ESTONIA

FRANCISCO R. BARBOZA, ESTONIAN MARINE INSTITUTE, UNIVERSITY OF TARTU, ESTONIA

RATIONALE FOR SELECTING THE TOOL

In the Väinameri and Väike Vän MPAs, human activities such as fishing, maritime traffic, pollution, and infrastructure development place significant pressure on marine ecosystems. To respond effectively, we needed to carry out cumulative impact assessments that help identify the most affected areas and inform spatial planning, as well as the design and management of conservation and restoration actions.

Robust decision-making depends on access to the best available ecological and environmental data. In practice, however, these data are often scattered across national databases, online portals, and project reports, which limits their usability for managers. PW4B already included a substantial share of the data required for our area, and our close collaboration with the PW4B developers allowed us to integrate up-to-date data layers from multiple national sources in a timely manner. This made the tool particularly well suited to support evidence-based decision-making in the Väinameri and Väike Vän MPAs.



IMPLEMENTATION APPROACH

We organised several in-person workshops with local stakeholders and MPA managers to clarify decision-makers' specific needs and to explore how the tool could be integrated into existing management workflows. Working closely with the tool developers and local MPA managers, we incorporated the required ecological, environmental, and management-related information into the web-based tool. Many of these data layers are now linked to national databases and receive automatic updates.

Once the new and updated information had been integrated, stakeholders defined a series of test scenarios for the pilot areas. Using the web tool, users can select an area of interest, identify a conservation target, and choose relevant human activities or pressures from predefined lists. The tool also allows users to modify the spatial distribution of human activities to reflect potential future developments, such as the designation of a new offshore wind farm area.

We then presented the results and ongoing developments of the PW4B tool, based on this initial stakeholder input, to decision-makers for further feedback. Their input directly informed continued refinements of the tool during the Blue4All project and will also guide future improvements beyond the project's timeframe.

RESULTS AND IMPACT

By integrating new data sources into the web-based tool, we significantly reduced analysis time and increased the use of scientific data in decision-making. All users of the tool can access this data-integration option by contacting the tool support team.

PW4B now provides MPA managers with a strong and reliable basis for conducting cumulative impact assessments. It supports spatial planning and coastal development processes, while also guiding the design, prioritisation, and monitoring of conservation and restoration measures.

Example of tool application:

If we aim to restore a fish species population, we can use the tool to identify suitable areas for restoration, such as key spawning habitats located in zones with relatively low human pressure. This helps target restoration actions more effectively and increases the likelihood of achieving long-term ecological benefits.



RECOMMENDATIONS FOR PRACTITIONERS

- We recommend holding stakeholder workshops to jointly agree on key conservation values, relevant human activities or pressures, and the intended use of the tool outputs. Clarifying these elements upfront helps ensure that results are meaningful for practical applications, such as identifying suitable areas for offshore wind development, assessing fisheries impacts, or informing the planning of new MPAs.
- We also recommend using PW4B as a decision-support tool, rather than as a decision-maker. The outputs can help explore options, visualise trade-offs, and structure discussions, but final decisions should also take into account policy frameworks, technical feasibility, and stakeholder priorities.
- Finally, we advise prioritising data quality. The value of the tool depends on the accuracy, resolution, and relevance of the data used. Integrating additional and updated local data layers—through direct collaboration with the PW4B developers—allows for more detailed, site-specific analyses and strengthens the relevance of the results for local management decisions.





TOOL

Non-indigenous species Effect Assessment Tool (NEAT)

The Non-indigenous species Effect Assessment Tool (NEAT) is a digital decision-support tool designed to assess the effects of non-indigenous species (NIS) on marine ecosystems, based on the operational framework developed by Kotta et al. (2025). It integrates species distribution modelling, systematic reviews with meta-analyses, and expert-based assessments to deliver spatial analyses of the effects of NIS on both biotic and abiotic components and processes of marine ecosystems.

CASE STUDY

Natura 2000 French MPA Network, France

MAËLLA SICARD, FRENCH OFFICE FOR BIODIVERSITY, FRANCE

KRISTIINA NURKSE, ESTONIAN MARINE INSTITUTE, UNIVERSITY OF TARTU, ESTONIA

FRANCISCO R. BARBOZA, ESTONIAN MARINE INSTITUTE, UNIVERSITY OF TARTU, ESTONIA

RATIONALE FOR SELECTING THE TOOL

The French Natura 2000 network in the North Sea Channel includes 38 marine protected areas (MPAs). While these sites are already subject to monitoring, we still lack a clear picture of where non-indigenous species (NIS)—that is, species not native to the area—are present and how they may affect local marine ecosystems and native species.

This information gap makes it particularly challenging to design and implement effective prevention or mitigation measures. Although the European Commission has issued directives on the monitoring and management of non-indigenous species, limited data and knowledge hinder practical implementation on the ground.

We therefore selected NEAT as a suitable tool to help address this gap at the scale of the entire French MPA network. By providing a structured approach for assessing ecosystem status and pressures, the tool offers a practical way to support a more coordinated understanding and management of NIS across multiple sites.



IMPLEMENTATION APPROACH

NEAT was originally developed as a framework for assessing the impacts of non-indigenous species (NIS) and was subsequently expanded by the University of Tartu into a web-based decision-support tool applicable in the Baltic Sea and the Oslofjord (version 1.0.0, published in April 2025). Within the Blue4All project, we further developed the tool to support implementation in the Celtic Seas and the Greater North Sea, including the French MPA network, and to incorporate feedback from stakeholders (version 2.0.0, published in November 2025).

At the start of the testing phase, the French Biodiversity Agency (OFB) identified approximately 125 non-indigenous species present in the area that could potentially affect local marine ecosystems. However, no spatial information was available to show where these species occur. To address this gap, we decided to develop and validate probability-of-occurrence models for NIS across the study area.

Species distribution modelling requires reliable occurrence records. We therefore compiled species occurrence data from all available open-access and national databases. As records from the French MPA network alone were limited, we expanded the data search to cover the wider Greater North Sea and Baltic Sea regions. Based on the available information, we produced initial distribution maps for 25 species with sufficient data. We complemented these datasets with citizen science records from French participatory mapping initiatives and collected global datasets on relevant environmental and anthropogenic variables.

Local experts reviewed the resulting maps for the French area in two validation rounds. Based on their feedback and user input, we refined the models to improve their accuracy and relevance.

For the impact assessment, we combined species distribution maps with information on the magnitude of NIS effects. We first derived this information through a systematic review of observational and experimental studies available in the scientific literature, which provided quantitative effect estimates for five species. For the remaining species, we relied on expert judgement to assess potential effects across different ecosystem components.

Finally, building on stakeholder feedback, we further enhanced the NEAT underlying code to calculate and visualise impacts at the level of individual species and to identify cumulative impact “hotspots”—areas where the combined negative effects of multiple non-indigenous species are strongest.



RESULTS AND IMPACT

The work carried out during the tool implementation and development phase enabled NEAT to be applied easily across the Celtic Seas, the Greater North Sea, and the Baltic Sea, at multiple scales: individual MPAs, national MPA networks, and transnational MPA networks. To date, we have tested and validated the tool within the French MPA network in the North Sea Channel, the Oslofjord, and much of the Baltic Sea. In practice, this means the tool can now be applied across a wide geographic range, from the English Channel to the Bothnian Bay. We encourage local experts in other regions to review and validate the species distribution maps for their own areas, in order to further scale up NEAT's implementation across Europe.

For the first time, the tool makes it possible to visualise the distribution of non-indigenous species, assess the potential effects of individual species, and identify hotspots where the combined negative impacts of multiple NIS are strongest. These outputs support the development of targeted monitoring plans and help focus attention on areas where risks and impacts are most likely to occur.

The web-based tool is open access and can be used by any MPA manager in the region. It does not require users to undertake new modelling or data collection. Instead, it provides a user-friendly interface that allows managers to base decisions on existing, consolidated data.

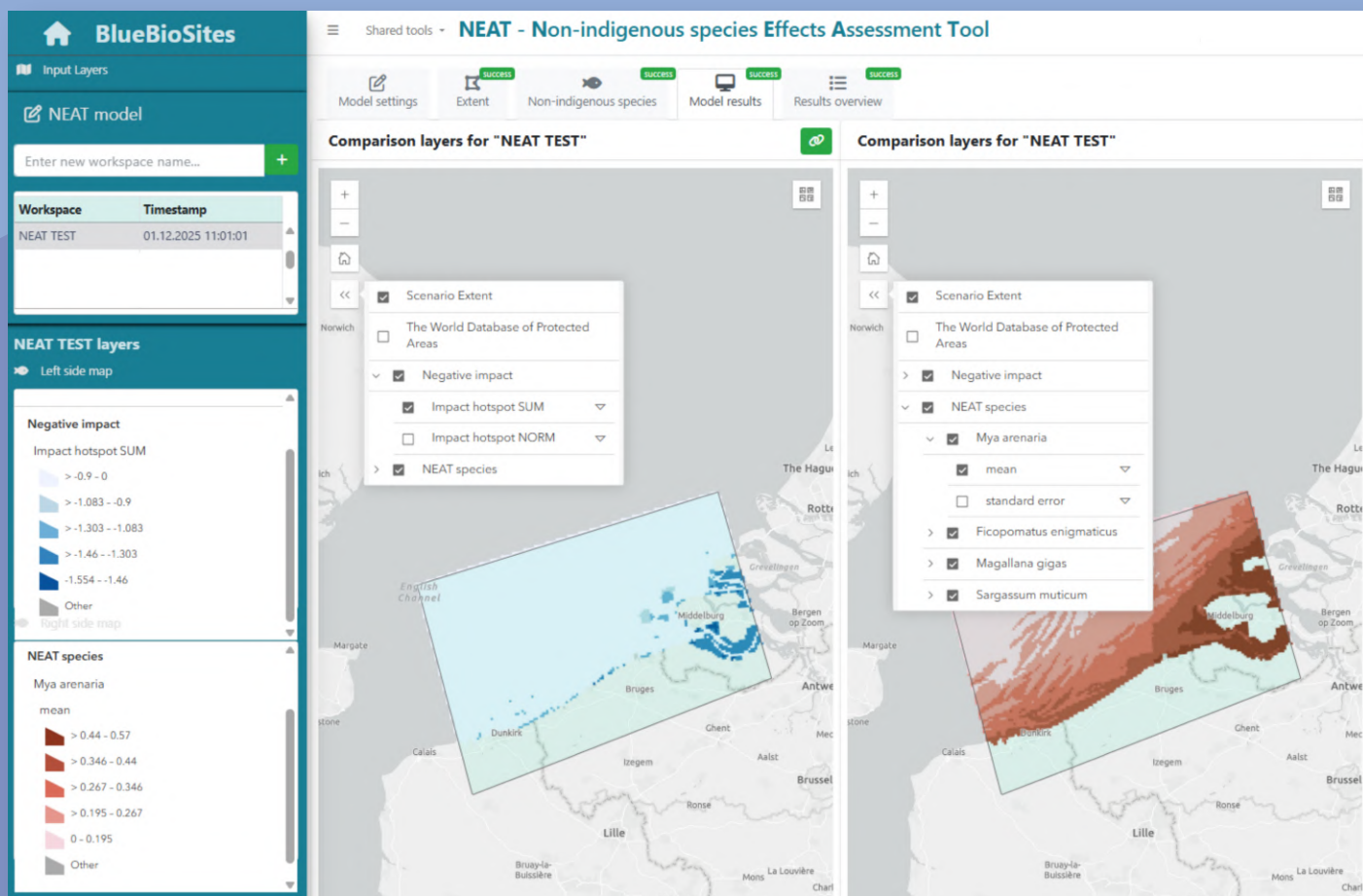
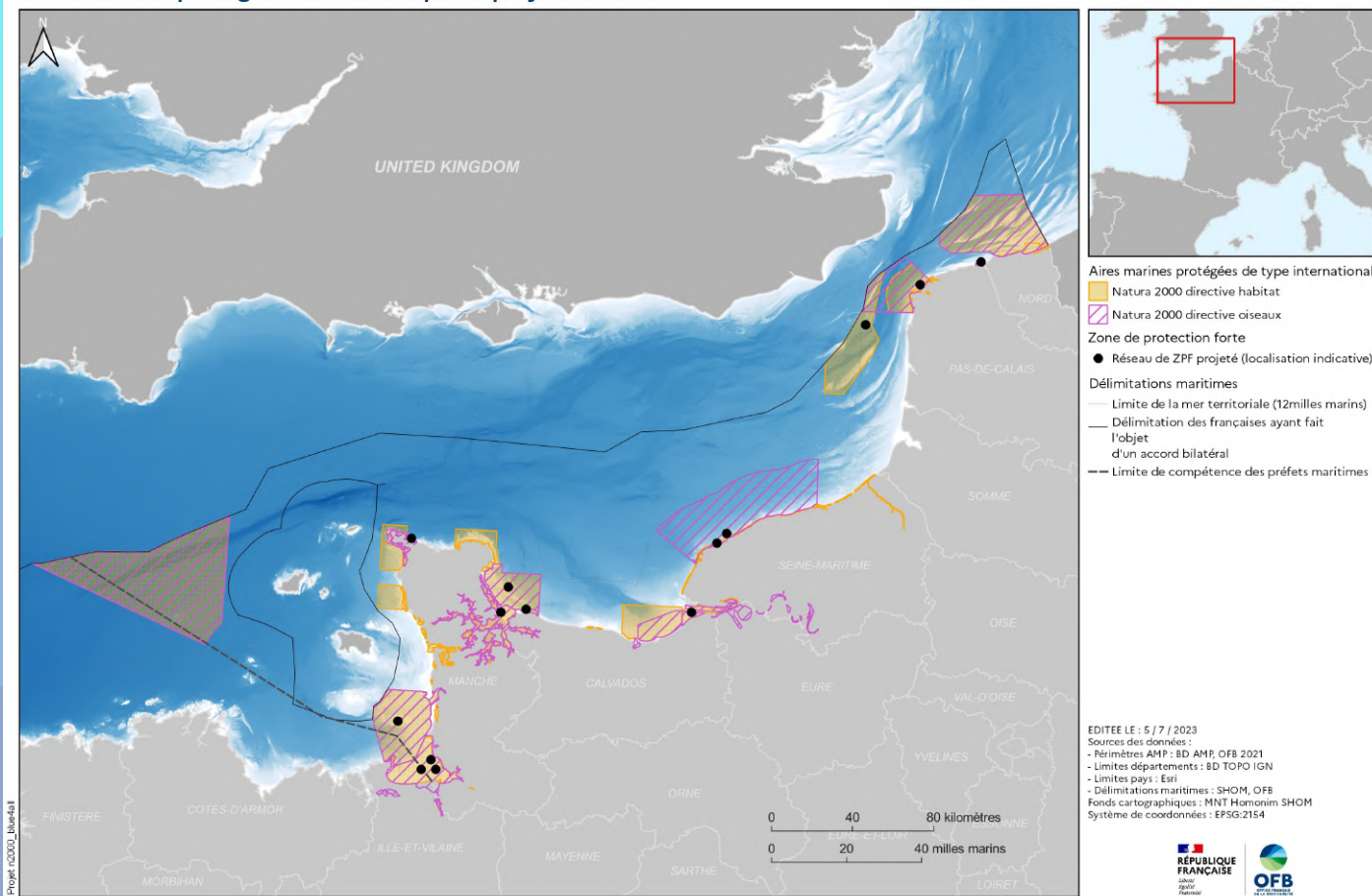
The negative-impact hotspot maps offer an overall estimate of the potential severity of adverse effects within a selected area. For example, while the impact of individual NIS within the French MPA network appears relatively low, the combined, additive effects are high in several locations and could lead to significant consequences if left unaddressed.

Finally, the tool allows users to overlay results with MPA boundaries and offshore wind-farm locations. This functionality makes it possible to visually compare potential impacts inside and outside protected areas and supports more strategic planning of research, monitoring, and restoration activities. Looking ahead, we expect NEAT to also support environmental impact assessments for existing and planned offshore wind farms by helping identify potential risks at an early stage and informing the design of targeted mitigation and monitoring measures that explicitly take NIS into account.



FACADE MANCHE MER DU NORD

Aires marines protégées concernées par le projet Blue4All



RECOMMENDATIONS FOR PRACTITIONERS

- We designed NEAT so that users without specialist GIS skills can apply it easily. A detailed user manual accompanies the tool and guides users step by step through both the interface and the interpretation of the outputs.
- We recommend using NEAT as a foundation for dialogue among different stakeholder groups, including experts, citizens involved in MPA activities, and public authorities. The tool can help build a shared understanding of maps and data, and it supports constructive discussions on practical solutions to reduce the impacts of non-indigenous species in marine areas.
- NEAT can also help reduce tensions between stakeholders from different sectors, such as conservation, fisheries, and offshore energy. By providing a common, evidence-based picture of the situation, the tool supports the development of joint action plans to address shared challenges.
- At present, NEAT brings together the best available data on the effects of non-indigenous species in the region. We therefore encourage its wide use to support informed decision-making and to address emerging issues at an early stage, before impacts become severe and significantly more difficult to manage.





TOOL

Benefit Transfer Method based on semi-structured interviews

In-depth interviews are a qualitative research method used to gain detailed insights into a person's beliefs, experiences, and attitudes through open-ended, one-on-one conversations. They are often semi-structured or unstructured, allowing the interviewer to explore topics in depth and adapt questions based on responses.

Benefit transfer for ecosystem service valuation is an approach that estimates the economic value of ecosystem services by transferring valuation results from existing studies to a different site or policy context. It uses previously derived values, functions or models to approximate benefits for ecosystems that have not been directly studied. This method enables valuation across broader areas by leveraging established economic evidence.

CASE STUDY

Vlaamse Banken, Belgium



WITO VAN OIJSTAEIJEN, UNIVERSITY OF ANTWERP, BELGIUM

BOB RUMES, INSTITUTE OF NATURAL SCIENCES, BELGIUM

ROSEMARIE LATTE

SOPHIE VAN SCHOUBROECK, UNIVERSITY OF ANTWERP, BELGIUM

RATIONALE FOR SELECTING THE TOOL

One outcome of the baseline assessment carried out with the Vlaamse Banken MPA management team was a clear lack of support for the MPA among local stakeholders. Stakeholders expressed limited agreement with some of the measures proposed by the management team, such as oyster bank restoration. In particular, they were not convinced that these actions would deliver tangible benefits for them or for the wider community.

In response, the MPA management team sought to better understand which ecosystem services the reintroduction of oyster banks could provide, and what the associated economic value of these services might be for local livelihoods. By clarifying these links, the team aimed to strengthen the evidence base for restoration measures and to improve communication with stakeholders about the potential social and economic benefits of oyster bank restoration.



IMPLEMENTATION APPROACH

We began by conducting a targeted literature review and compiling a list of relevant experts to involve in semi-structured interviews.

We then developed a questionnaire for the interviews, which the MPA management team reviewed and validated. We carried out online interviews with seven experts from diverse backgrounds, including ecologists, oyster bank restoration specialists, fisheries scientists, and representatives from the fisheries sector.

Insights from these expert discussions helped us identify the most relevant ecosystem services and suitable data sources to support the benefit transfer calculations. The Benefit Transfer Method estimates economic values by transferring benefit estimates from studies previously carried out in other locations or for similar environmental issues.

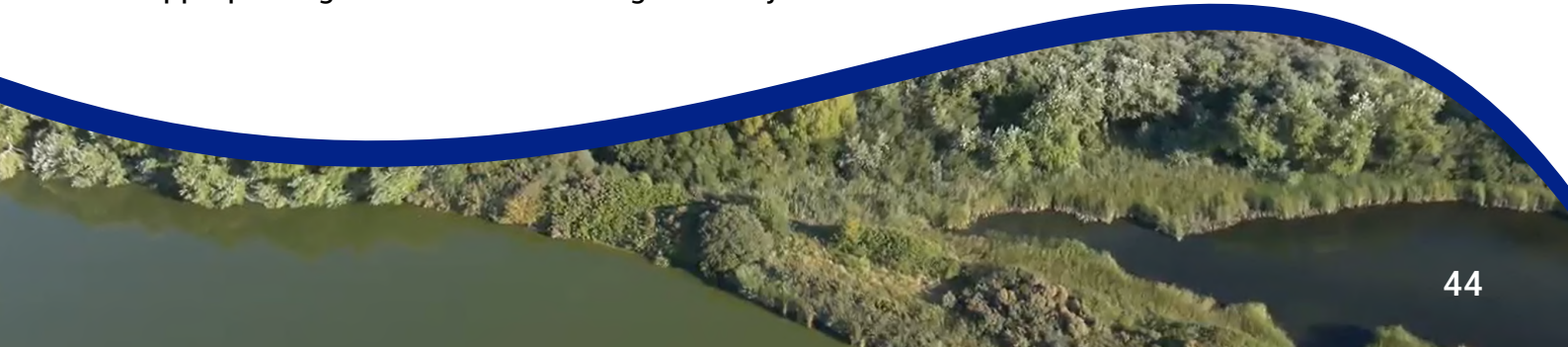
In our case, available data were relatively limited and often only partially applicable to the Vlaamse Banken context. Most existing benefit estimates for oyster banks are based on shallow, coastal environments. By contrast, oyster banks in Vlaamse Banken are located offshore (approximately 25 km from the coast) and at greater depths (around 30 metres), where certain ecosystem processes—such as denitrification—play a less significant role.

RESULTS AND IMPACT

Due to limited data availability, the results of the economic valuation were associated with a high level of uncertainty.

Despite this, the process proved valuable in clarifying what information is needed to better support proposed oyster bank restoration measures in the future. While experts could not reliably quantify the magnitude of benefits, there was broad consensus on the positive effects of oyster bank restoration on biodiversity and fish stocks. The work also helped identify priority indicators to monitor, highlighted practical challenges linked to implementing restoration activities in deeper offshore waters, and opened up new avenues for future research.

The monetary valuations of ecosystem services derived through the benefit transfer method nevertheless showed strong potential as communication tools. Presenting ecosystem services in economic terms can help make environmental benefits more tangible for stakeholders and decision-makers. More broadly, applying an ecosystem services valuation approach supports informed decision-making by helping the MPA management team assess which management actions to pursue and which may be less appropriate given current knowledge and objectives.



RECOMMENDATIONS FOR PRACTITIONERS

- We found that involving experts from a wide range of professional backgrounds in the semi-structured interviews is essential to capture the topic from multiple perspectives. This diversity of expertise is more important than the total number of interviews, as conducting too many interviews can lead to data saturation, where additional discussions yield little new or relevant information.
- Combining qualitative and quantitative approaches proved to be good practice. Qualitative insights help interpret and contextualise quantitative results, while also deepening understanding of the mechanisms behind observed patterns and figures.
- Benefit transfer calculations can provide robust and meaningful results when sufficient and context-appropriate data are available. However, their reliability is strongly dependent on the quality, relevance, and transferability of existing data sources.
- Finally, the overall process includes a substantial research component and should be planned within a timeframe that allows adequate space for data collection, analysis, valuation calculations, and feedback from experts and stakeholders. Allowing sufficient time is key to ensuring both the credibility of the outputs and their usefulness for decision-making.



IMAGE CREDITS

–in order of appearance–

Front cover, images from left to right,

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Facilitated Discussion Groups

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Perception, Elicitation and Awareness Raising (PEAR) toolset

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Participatory stakeholder engagement process for the revision of marine protected area (MPA) zones - Capo Carbonara, Italy

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Perception, Elicitation and Awareness Raising (PEAR) toolset

Otranto, Italy

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Page 21: Otranto MPA (QR-code questionnaire);

Otranto MPA (map)

Marine protected area (MPA) Finance Planner

Torre Guaceto, Italy

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Expert-based Ecosystem Service Assessment

Danish Wadden Sea, Denmark

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Page 29: Danish Wadden Sea National Park

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Danish Wadden Sea National Park (diagramme)

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PlanWise4Blue (PW4B)

Väinameri and Väike Väin, Estonia

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Kaisa Raatikainen

Non-indigenous species Effect Assessment Tool (NEAT)

Natura 2000 French MPA Network, France

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Benefit Transfer Method based on semi-structured interviews

Vlaamse Banken, Belgium

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