



DELIVERABLE 2.6

WEBINAR POLICY RECOMMENDATIONS FOR SAFE ECOLOGICAL LIMITS OF COASTAL WATERS

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Abstract	Core NAPSEA results and policy recommendations were presented to about 40 participants of an online webinar, mostly with a science and policy background. A questionnaire and a discussion supported the source-to-sea approach of NAPSEA and the need of additional, ecology-based indicators / threshold values. They also provided additional input for the upcoming policy brief and suggested further steps.
Keywords	Communication, nutrient input, policy, reduction measures, scenarios, social acceptance

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LIST OF ABBREVIATIONS

MSFD.....	<i>Marine Strategy Framework Directive</i>
OSPAR	<i>Oslo Paris Convention for the Protection of the Marine Environment of the North–East Atlantic</i>
WFD.....	<i>Water Framework Directive</i>

EXECUTIVE SUMMARY

The NAPSEA webinar “Policy recommendations for safe ecological limits of coastal waters” was held online on the 09 September 2025. 31 persons from Central Europe participated, and 10 from the NAPSEA consortium. Most participants have a science or policy background and is active at the national or international level. After three presentations about core results of the work packages 2 (social acceptance, policy analysis), 3 (scenario results), and 4 (reduction needs), they were invited to answer a questionnaire on the approach and major results of NAPSEA.

The webinar showed the general support of the source-to-sea approach which NAPSEA also implemented as well as of additional, science- and ecology-based indicators which ideally resonate with the public. It was suggested to communicate the findings broadly. The recorded presentations are available from the NAPSEA website.

1. INTRODUCTION

1.1. The NAPSEA project

This project addresses the effectiveness of ‘Nitrogen And Phosphorus load reduction measures from Source to sEA, considering the effects of climate change’ (NAPSEA). The primary objectives of NAPSEA are to support national and local authorities in the selection of effective measures to reduce nutrient loads and to create political support for their execution. The project employs an integrated approach spanning from pollution sources to sea, considering governance, nutrient pathways and measures, as well as ecosystem health. Geographically, the project focuses on the Wadden Sea catchment area, with specific case studies for the Rhine, Elbe, Hunze, and the Wadden Sea itself. NAPSEA serves as a platform to show practices in the implementation of socially acceptable, sustainable, and efficient measures.

The envisaged outcome of Work Package (WP) 2 is an improved support, with a set of guidelines, for the policy vision of clean European seas by 2030. Efforts to combat eutrophication have significantly advanced in Europe, but certain challenges remain, such as disjointed policies, adverse effects of high nutrient inputs, and limited public acceptance of measures. WP2 aims to analyse the policy and socio-economic aspects of nutrient management. This includes analysing barriers and highlighting good practices for implementing sustainable and effective strategies to reduce marine pollution – encompassing administrative, legal, financial, technical, and social dimensions.

1.2. Objectives

The overarching objective of the webinar was to get feedback and to discuss key policy recommendations for the upcoming policy brief (Deliverable 5.6). They are based on the summary of reduction needs and scenario results (van Beusekom and van der Heijden, n.d.) as well as the analyses of policies (Dworak et al. 2025) and social acceptance (Geidel et al., n.d.). The objective of this report (Deliverable 2.6) is to briefly describe the webinar and the main outcomes for the policy brief.

2. ABOUT THE WEBINAR

2.1. NAPSEA presentations

The webinar consisted of three presentations to summarize the key results of WP 3 and 4 on safe ecological boundaries, reduction requirements, and scenarios outcomes (L. van der Heijden “Nutrient reductions and the ecological status of the sea – The Wadden Sea as an example for other European catchment-sea systems”) as well as key outcomes of WP 2 on social acceptance (T. Geidel “Social acceptance of nutrient reduction measures”) and of the policy analysis (W. Leujak “Policy recommendations for improving nutrient reduction strategies”). The latter presentation also outlined the overall conclusions and recommendations of NAPSEA. These presentations were recorded, except for the Q/A parts afterwards, and are available on the NAPSEA website (NAPSEA 2025).

2.2. Design of the questionnaire

The discussion of the policy recommendations with the participants was structured along a questionnaire. Participants were invited to elaborate on their answers. After three questions to inquire about their professional background, the remaining questions were linked to the current management as well as the NAPSEA approach and outcomes (Table 1).

2.3. Invitation of participants

The webinar was announced in June via LinkedIn (UBA, Deltares, Fresh Thoughts Consulting) and via the UBA website to invite potential participants to register. To increase the number of registrations, we contacted 118 potential participants individually via e-mail end of August. Another 5 e-mail addresses were function-related or distribution lists. These e-mails were previously provided by NAPSEA partners. Participants had to register themselves in advance.

Table 1. Questionnaire for the participants with the type of answer.

Question	Type of answer
Where are you from?	Click on map
What is your main role/background regarding water quality?	Choose option
At which level are you primarily active?	Choose option
Are the current management frameworks under WFD and MSFD/OSPAR effective in addressing nutrient inputs/eutrophication?	Choose option
Do you support additional indicators for safe ecological boundaries which may result in stricter nutrient reduction requirements?	Choose option
Are you satisfied with the current threshold values and the narratives? Do they sufficiently protect the ecosystems?	Choose option
Do you consider the nutrient management along the freshwater/coastal/marine continuum sufficiently coherent following the source-to-sea approach?	Choose option
What recommendation(s) do you consider most urgent?	Rank options
Are there any recommendations/considerations that you would like to give back to the NAPSEA team?	Free text
What do you consider as important next steps with regard to this issue?	Free text

3. OUTCOMES QUESTIONNAIRE AND DISCUSSION

3.1. Background of participants

Besides 10 persons of the NAPSEA consortium, 31 participants joined the webinar (Table 4 in the Annex). About half of them also answered the questionnaire (and 4 of the NAPSEA consortium). 11 registrants did not participate at all. All non-NAPSEA participants are from Central Europe (Figure 1). The majority has a science or policy background (Figure 2) and is active at national and international levels (Figure 3).

Where are you from?

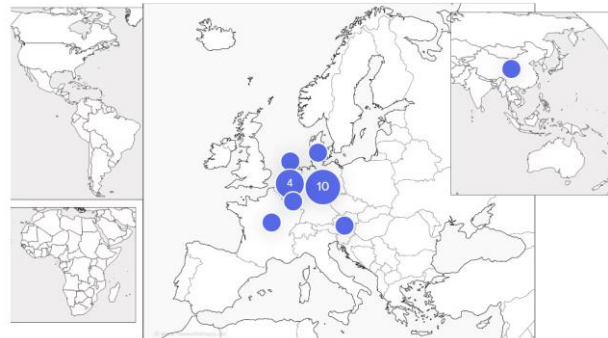


Figure 1. Most participants were from Central Europe ($n=20$).

What is your main role/background regarding water quality?

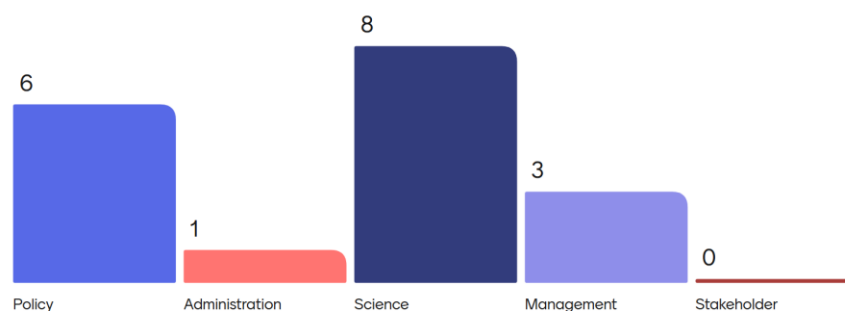


Figure 2. Main role and/or background of the participants ($n=18$).

At which level are you primarily active?

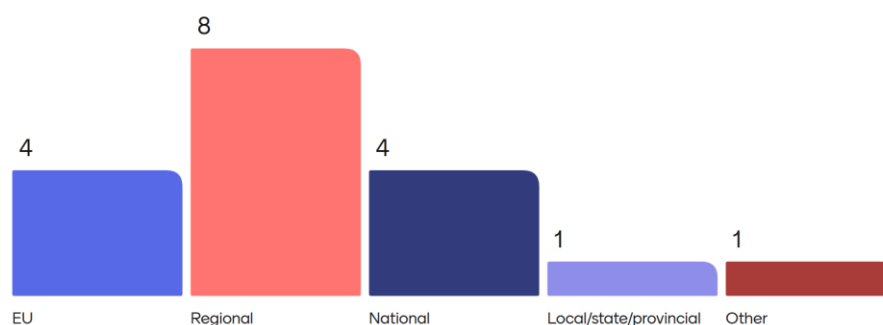


Figure 3. Primary level of activity of the participants ($n=18$).

3.2. Policy recommendations

Most participants agree with the NAPSEA findings regarding the ineffectiveness of the current management frameworks under the Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD) against eutrophication (Figure 4) and support additional indicators even if they result in more reduction needs (Figure 5). Ecology-based indicators help to overcome political targets like the OSPAR approach of using the year 1900 as the reference for the pre-eutrophic state to which 50% are added. They were considered useful to substantiate the existing assessments and would, ideally, appeal to the public and address social concerns. However, they may complicate the management, especially if the results differ among narrative. One participant objected that seagrass is considered as an indicator but should be considered as objective of the WFD. Although the majority who answered these two questions had an opinion, the choice of “mostly yes” or “mostly no” (as most dominant answers) were not easy, as it depends on the perspective, e.g. the legislation against (the lack of) implementation.

Are the current management frameworks under WFD and MSFD/OSPAR effective in addressing nutrient inputs/eutrophication?

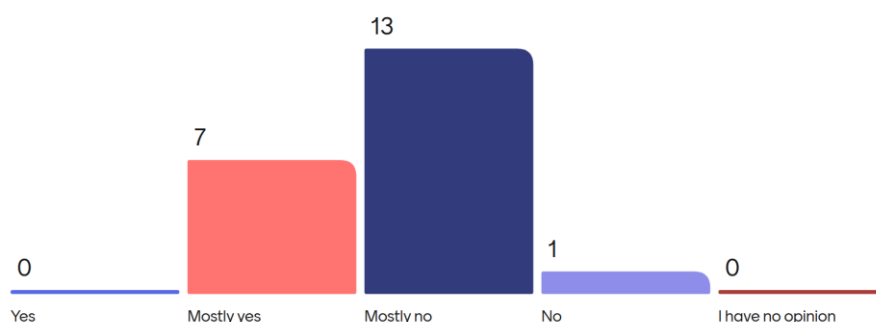


Figure 4. Response of participants regarding the effectiveness of the current management frameworks to reduce nutrient inputs or eutrophication (n=21).

Do you support additional indicators for safe ecological boundaries which may result in stricter nutrient reduction requirements?

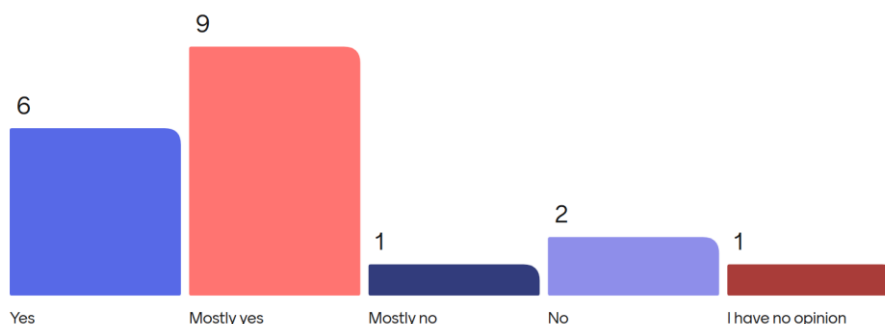


Figure 5. Support of participants regarding additional, ecology-based indicators (n=19).

In accordance, most participants are not satisfied with the current threshold values and the narratives (Figure 6). For instance, OSPAR uses threshold values based on the “pre-eutrophic concentrations” for which observation data is unavailable. Therefore, catchment and ecosystem models have been used to estimate the situation in 1900 as reference conditions to which 50% are added. However, the use of this fixed offset has to be revised as it, for instance, neglects non-linearities. It would also be helpful to include uncertainties along the modelling chain.

Are you satisfied with the current threshold values and the narratives? Do they sufficiently protect the ecosystems?

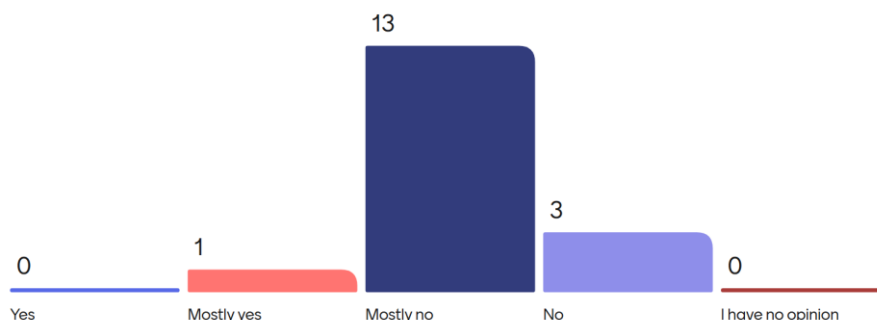


Figure 6. Response of participants regarding the threshold values and their narratives (n=17).

Most of the participants also agreed with the outcome of the policy analysis that the nutrient management lacks coherence along the freshwater/coastal/marine continuum (Figure 7). One aspect is the insufficient flow of data and information on expected nutrient reductions under the WFD to model assessments under MSFD/OSPAR.

Do you consider the nutrient management along the freshwater/coastal/marine continuum sufficiently coherent following the source-to-sea approach?

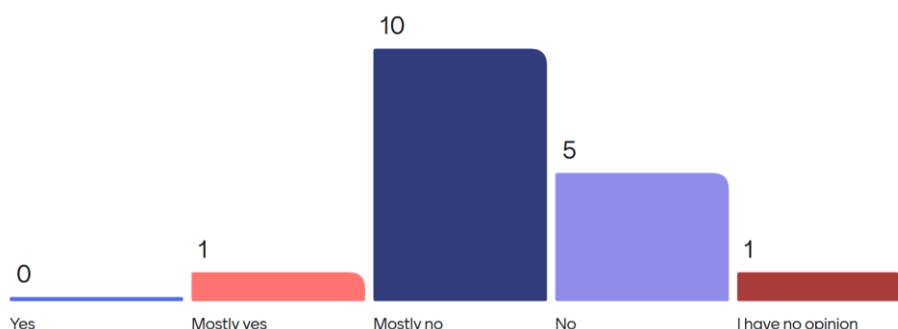


Figure 7. Response of participants regarding the coherence of the nutrient management along the freshwater/coastal/marine continuum (n=17).

What recommendation(s) do you consider most urgent?

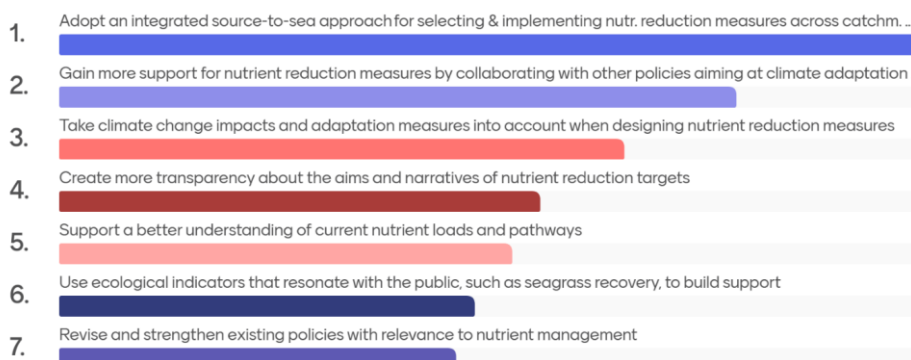


Figure 8. Key NAPSEA policy recommendations ranked by the participants (n=17).

Despite the support for new indicators which better resonate with the public, other NAPSEA recommendations were considered more urgent (Figure 8). Most participants ranked the adoption of a source-to-sea approach highest, which aligns with the general NAPSEA approach. In this context, it was stressed that observation data on riverine silica concentrations is needed as model input to better consider diatoms and eventually chlorophyll

concentrations. Furthermore, the source-to-sea approach needs estuary models to close the gaps between monitoring data and the requirements of marine models.

The open recommendations and next steps (Tables 2 and 3) addressed aspects which are relevant for the upcoming policy brief and other future NAPSEA-based outreach, as well as of more general relevance:

- Policy brief: new threshold values are more science based than existing ones, compare reduction needs based on current threshold values and ecology-based indicators, address institutional challenges and how the recommendations could be implemented, consider that the analysis of the social acceptance may challenge the political obstacles of more measures from farmers, implementation of already agreed measures should (also) be improved
- Outreach: report and discuss findings to different groups and levels including stakeholders, co-benefits of additional measures, e.g. for climate mitigation
- General: source to sea needs better integration in modelling and regulation as well as more cooperation in research, approach may also be applicable to other seas which suffer from eutrophication, common understanding with other MSFD descriptors needs to be fostered, research is needed to derive current and target nutrient loads based on e.g. biological quality elements of the WFD

Table 2. Recommendations and considerations that participants gave back to the NAPSEA team.

Please report your recommendation concerning the CAP ¹ deficiencies to the EU
please be clear about the extra need of measures probably needed to get good seagrass fields that help a big ecosystem and climate mitigation.
Very clear communication of the results and recommendations. Wide outreach would also be important.
In next steps, please consider focusing more on WFD objectives (in particular good status for biological quality elements and respect of the threshold for concentrations of N and P ²). Thanks.
Transparency about the threshold levels is important but the 50% is not supported by science and so not explainable
Compare the reduction needs for the Rhine to achieve 'safe ecological boundaries' with the reduction needs of the current TVs ³

¹ Common Agricultural Policy, ² nitrogen and phosphorous, ³ threshold values

Table 3. Important next steps mentioned by participants.

make an inventory about the other coastal water s along the EU coasts and if these could use some of your approaches.
Improve level of implementation of already agreed measures.
More integration of source to sea, both at the modelling level (estuarine processes) and at the regulatory level
n
Maybe think of establishing a „round table of nutrient Management“ among different stakeholders
Follow up discussions with e.g. OSPAR, River commissions, people working on RBMPs ¹ etc. to see how feasible they think the recommendations will be.
mediterranean and black sea are important too, Atlantic coast is having heavy algae issues
Communication of the project results into different groups and levels. Follow-up project would be really helpful to widen the project scope to more countries or even other seas such as the Baltic Sea
Find common understanding with other MSFD descriptors, like Biodiversity,
Strengthen Cooperation between terrestrial, aquatic and marine eutrophication research. Strengthen implementation of save nutrient ratio's
Regarding the recommendations: specify not only what should be done but also how - including institutional challenges.
An important step is making operational research to calculate current nutrient loads as well as target loads (on the basis of WFD BQEs ² and PC ³ thresholds).
could your data from survey/farmers interviews relativize the ' political impossibility' to ask extra measures from farmers

¹ river basin management plans, ² biological quality elements, ³ physico-chemical

4. REFERENCES

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ANNEX

Table 4. Participants of the webinar sorted by last name except for 4 anonymous ones. Presenters in dark grey, other NAPSEA staff in light grey.

First Name	Last Name	Organisation
Julée	Al-Bayaty de Ridder	University of Amsterdam
Marijke	Boonstra	Ministry of Infrastructure & Watermanagement
Martine	Broer	Umweltbundesamt AT
Nivedha	Elango	HAEDS
Oliver	Gabriel	Environment Agency Austria
Annika	Grage	BSH ¹
Stephanie	Helber	Umweltbundesamt
Heike	Herata	German Environment Agency
Birgit	Heyden	AquaEcology
Maximilian	Hofmeier	German Environment Agency
Benjamin	JEANNOT	European Commission - DG Environment ²
Annegret	Kuhn	Kiel University (Center for Ocean and Society)
Hermann	Lenhart	AquaEcology
Christine	Matauschek	Fresh Thoughts Consulting
Claudia	Mendes	European Commission – JRC ³
Tanya	Milkova	Fresh Thoughts
Claude	Neuberg	Administration de la gestion de l'eau
Saskia	Onnink	DG ENV ²
Eva	Reiter	German Environment Agency
Lena	Rönn	Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz
Christoph	Rummel	German Environment Agency – UBA
Katrin	Schertenleib	MEKUN GER SH ⁴
Patricia	Schouten	Ministerie Infrastructuur en Waterstaat
Bertrand	Vallet	European Commission
Heleen	van de Velde	Ministerie van IenW
Sonja	van Leeuwen	NIOZ ⁵
Astrid	Verkerk	Rijkswaterstaat
Anouk	Blauw	Deltares
Lisette	Enserink	Rijkswaterstaat
Yuki	Fujita	NMI
Teresa	Geidel	Fresh Thoughts Consulting
Andreas	Gericke	Umweltbundesamt
Wera	Leujak	Umweltbundesamt
Xiaochen	Liu	Deltares
Tineke	Troost	Deltares
Justus	van Beusekom	Hereon
Luuk	van der Heijden	Deltares

¹ Bundesamt für Seeschifffahrt und Hydrographie (DE), ² Directorate-General for the Environment of the European Commission, ³ Joint Research Center (Directorate-General of the European Commission), ⁴ Ministerium für Energiewende, Klimaschutz, Umwelt und Natur des Landes Schleswig-Holstein (DE)