

Report of the Annual Meeting between ICES, Advisory Councils and other Observers (MIACO)

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i Executive summary

The 2026 MIACO meeting brought together ICES leadership and secretariat with observers, and stakeholders of ICES advice to review progress on advisory processes, scientific developments, and strategic initiatives. The meeting opened with emphasis on ICES' mission to deliver resilient, impartial, and transparent scientific advice, alongside a reaffirmation of commitments to ethics, diversity, and environmental responsibility.

Participants reviewed ICES advice produced in 2025, noting that more than 200 advisory documents and over 100 expert group reports were completed, covering recurrent fisheries advice, vulnerable marine ecosystems, bycatch, and special requests. Key trends included more stocks exploited below F_{MSY} but increased variability in catch advice, a rise in zero-catch recommendations, and persistent low recruitment in many demersal stocks. Quality assurance enhancements and progress in benchmark methodologies were highlighted, including updates to benchmark guidelines and the establishment of targeted "Tiger Team" to address challenging assessments.

Scientific presentations showcased developments across ICES expert groups, including biodiversity initiatives, cumulative impact assessments, oceanographic products, animal welfare, and restoration science. This highlights the strengthening links between science and advisory processes. Stakeholders stressed the value of transparency and collaboration, and ICES reaffirmed its commitment to inclusive engagement.

Key discussions addressed ecosystem and climate-informed advice, with subgroups assessing options ranging from ecosystem-informed reference points to climate-conditioned catch scenarios. Participants generally prioritised approaches expected to directly influence advice while noting feasibility challenges and data needs. Broader themes included competition for marine space, biodiversity impacts, and the importance of clear, actionable ecosystem overviews.

Further sessions reviewed ongoing work to revise ICES reference points and the advice rule, MIACO discussed strengthen stakeholder engagement through WGENGAGE and the importance of credibility and trust in ICES advice. Updates were also provided on Management Strategy Evaluation, biodiversity advice, VME benchmarking, and the development of interactive online advice products aimed at improving accessibility and usability.

The meeting concluded with reflections on meeting structure, the importance of early document circulation, and continued emphasis on transparency, communication, and collaborative development of science-based advice.

ii Expert group information

Expert group name	Annual meeting between ICES, Advisory Councils and other Observers
Expert group cycle	Annual
Year cycle started	2026
Reporting year in cycle	1/1
Chair	Colm Lordan
Meeting venue and dates	22-23 January 2026, Copenhagen, Denmark and online (68 participants)
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1 Welcoming and opening of the meeting

Colm Lordan, ACOM Chair, Carl O'Brien, ICES President, and Alan Haynie, ICES General Secretary welcomed attendees, emphasizing the importance of the meeting as a chance for ICES to engage with observers and stakeholders regarding ICES processes.

In addition, the opening included remarks on the mission and procedures of ICES emphasizing the organization's commitment to provide resilient and impartial scientific advice.

The ICES Code of Ethics and Professional Conduct was presented including the promotion of gender equality and diversity within the organization, reaffirming ICES's commitment to environmental responsibility and community well-being.

2 Adoption of agenda

The ACOM chair went through the meeting agenda, listing each item and what would be covered individually. A new item spotlighting science groups was introduced. The ACOM chair stated that the annotated agenda will be available the month prior and all other documents a week prior to the 2027 MIACO meeting.

Action point: The annotated agenda will be available one month prior to the meeting next year. The majority of documents will be available at least one week prior to the meeting.

3 Overview of ICES advice produced in 2025

The ACOM chair presented an overview of ICES advice activities in 2025. The Advisory Committee ACOM has one member per ICES country, supported by alternates, ensuring a broad base of expertise is involved in the process.

The advice production process involves request formulation, knowledge synthesis, peer review, and consensus-based advice production, with all advice agreed by the ACOM. It is then published with an emphasis on ensuring scientific rigour and transparency. The 10 principles that govern ICES advice were also showcased to display the steps and procedures it takes to publish the ICES advice. These principles include:

- 1) Document openly
- 2) Formulate request iteratively
- 3) Clarify objectives and risks
- 4) Deliver timely knowledge
- 5) Use best available science
- 6) Apply FAIR data principles
- 7) Undergo peer review
- 8) Develop clear and consistent advice
- 9) Agree by consensus
- 10) Explain without advocacy

The two main streams of advice: recurrent advice (e.g., fishing opportunities, VME, bycatch) provided annually or biannually, and special requests for one-off or developmental advice, with both streams leveraging thousands of experts across member countries.

ICES has built-in quality assurance procedures, including peer review of benchmark methods, independent reviewers for special requests, and advice drafting groups that ensure advice aligns with established procedures before final consensus by the advisory committee.

In 2025, over 200 advisory documents were published, supported by more than 100 expert group reports, 60 new stock annexes; 15 data calls; and 3 new technical guideline documents. ICES provides advice to governmental-level organisations only. The portfolio in 2025 included fisheries advice for 180 stocks and 12 special requests, 9 technical services and 9 other overviews or guidance documents.

The proportion of stocks exploited below F_{MSY} has increased since 2000, indicating progress towards sustainable fisheries management, though some stocks remain far from sustainable levels and require special attention. The SSB/MSY $B_{trigger}$ ratios, showed an increasing trend between 2000 until 2015 but there has been a slight decline since. The ACOM chair highlighted a concerning trend of low recruitment in demersal fish, particularly in the most recent years, as shown in a heat map of recruitment deviations.

There has been a rise in the number of stocks receiving zero catch advice, now over 47 stocks (about 20%). Some of this can be attributed to persistent low recruitment and productivity reductions, even among some stocks fished at sustainable levels. Additionally, it was discussed that recent years there has been increased variability in advice, with both positive and negative changes in catch recommendations, which underscores the importance of monitoring advice stability over time.

Benchmarks are a keyway to improve assessments and address issues including retrospective patterns or over optimistic forecast. Benchmark guidelines were updated in 2025 ([ICES, 2023](#)).



Figure 1. Summary of ICES advice produced in 2025, the numbers on the map indicate the number of stocks per ICES Ecoregion.

A review level benchmark called the Northern shelf cod Tiger Team was established to address assessment and advice challenges. The ACOM chair then highlighted the progress of the North Sea cod Tiger Team and how it has been focusing on short-term improvements to the current assessment set-up, exploring combined and multi-stock models, and planning for medium-term enhancements as more data becomes available. Additionally, the recap of the Tiger Team progress showed that their aim is to maintain transparency by communicating progress to stakeholders and may organize meetings between advice requesters and experts to discuss translating assessments into operational advice.

An overview of meeting participation by ACOM leadership was then shared, as well as information regarding ADG participation in 2025. This was then followed by new developments in 2025, such as the ICES Roadmap for Offshore Renewable Energy (ORE) and new workshops/requests that were started in 2025 (for example: the Workshop to scope harmonized regional monitoring schemes to assess the impact of offshore windfarms on fish, pelagic, benthic communities and ecosystem functions (WKOMO); the Workshop to develop an ICES survey mitigation strategy (WKDISM); and the Netherlands request on cumulative impact assessment, on behalf of the Greater North Sea Basin Initiative (GNSBI).

The ACOM chair then outlined the pipeline for special requests in 2026, including those related to Northern Shelf cod genetic sampling, NEAFC collection bags, support for D6C5 Threshold Values, VME advice for DGMARE, LTMS on North Sea saithe, and bycatch of marine mammals in the OSPAR area. Additionally, future special requests that are yet to be scheduled were highlighted, such as request related to nature restoration, marine strategy framework directives, ongoing development of ecosystem and climate-informed advice, bycatch monitoring programmes for DGENV, and VME requests from DGMARE.

Round table of comments

A MIACO participant questioned if the increase in stocks below B_{lim} is not primarily due to ICES guidelines changes. ICES clarified that the increase at the start of the time series was due to

reporting of more stocks in the database and the guidelines had not changed significantly in the later part of the time series.

MIACO provided some feedback on the meta-analysis of stocks suggesting that numbers of stocks in each category would be useful since percentages could be misleading. They also suggest that the evolution of numbers of stocks by ICES categories and to compile and analyse absolute values and trends in catch advice by trophic level.

Some MIACO participants highlighted the urgent need for effective rebuilding advice and strategies, including technical measures and harvest control rules, to address the challenges posed by low productivity and stock declines. ICES confirmed that it had been working on this topic with a MIRIA subgroups and two previous workshops WKREBUILD 1 & 2 ([ICES, 2020](#) & [ICES, 2023](#)).

The integration of other objectives in ICES advice beyond maximum sustainable yield MSY was raised by some participants including using size and age-based indicators, linking to sea floor impacts or maximising biomass. The capabilities of ICES to produce advice on technical measures e.g. minimum and maximum landings size, closed areas and seasons, etc., was discussed as was ICES's role to provide social and economic advice. ICES can and does provide advice on these aspects when requested (e.g. the recent spurdog special request [ICES, 2025](#)) and has groups such as WGECON and WGSOCIAL working on those aspects but there are also other bodies such as Scientific, Technical and Economic Committee for Fisheries STECF of the EU also providing advice. ICES has previously provided advice to DGENV on a number of Marine Strategy Framework Directive Indicators including D3C3 and D6 but it is not always straightforward to operationalise or integrate those in the fishing opportunities advice.

Several participants reflected on the evolution and current state of stakeholder engagement in ICES processes. MIACO appreciated the significant increase in stakeholder engagement within ICES, referencing the work of Human Dimension Steering Group (HUDISG), Working Group on Maritime Systems WGMARS and Working Group on Stakeholder Engagement WGENGAGE, and emphasising the value of diverse perspectives in shaping advice and processes. The procedures for stakeholder to participate as observers in advice drafting groups is available on the stakeholder and observer pages on the [ICES website](#). ICES encourages stakeholders to provide feedback on their experiences in advice drafting groups and other forums and is committed to ongoing efforts to improve communication, including an open invitation for informal discussions. Participants such appreciation for the increased transparency and inclusivity in ICES processes, while others, called for additional forums to address complex issues outside of regular meetings.

The development and integration of ecosystem and climate informed advice was raised by several participants as a priority. Noting that the poor status of the Baltic ecosystem requires a new ecosystem-based approach and increased clarity in the advice about what factors are considered and what ones are not yet integrated but could be increase the risk.

One MIACO participant expressed concerns about the cumulative effect of multiple precautionary measures, questioning their proportionality, transparency and impact on advice credibility particularly for mackerel. ICES explained the scientific basis and process for such decisions. ACOM agreed in March that recruitment assumptions should be based on recent plausible estimates because the available evidence was that recruitment for stocks below B_{lim} has been overestimated in the past and the forecast is particularly sensitive to that input. Furthermore, advice drafting groups ADGs or ACOM often revises forecast settings, and this was nothing particularly unusual, acknowledging that there was significant focus on the mackerel advice in 2025. The ACOM chair summarised by saying that within the advice ICES is taking account of the known uncertainties and "known unknowns" with plausible assumptions and evidence-based uncertainty buffers, but the advice may not be robust to unknow factors.

MIACO also listed several positives in 2025 including; the general level and quality of ICES output, the new infographics for the ecosystem and aquaculture overviews, the successful benchmark process on mackerel and Norwegian spring spawning herring, new science groups on animal welfare and the advice on offshore wind impacts (ICES, 2025).

4 Spotlight on ICES science groups

The pre-recorded ‘elevator pitches’ from the chairs of the following science groups were presented: Working Group on Operational Oceanographic Products for Fisheries and Environment (WGOOFE), Working Group on Cephalopod Fisheries and Life History (WGCEPH), Working Group on Biological Effects of Contaminants (WGBEC), and Working Group on Maritime Systems (WGMARS).

The SCICOM chair presented a selection of additional non-advisory expert groups and strategic initiatives to MIACO. The strategic initiative biodiversity science and advice (SIBSA) was introduced as an umbrella group to integrate existing biodiversity work at ICES, to identify gaps and bridges towards developing advice. The SCICOM chair then presented a highlight of ongoing work from the Working Group on Cumulative Impacts Assessment Approaches in Management (WGCIAM), Workshop on Fish Distribution (WKFISHDISH), Working Group Assessing the Impact of Fishing on Oceanic and Atmospheric Carbon (WGFISHC), Working Group on Aquatic Animal Welfare (WGAAW), and the Working Group on Marine Restoration (WGREST). The chair then opened the floor for comments.

A MIACO participant asked whether in cases where the working groups are being formed from a previous workshop (e.g. WGFISHC and WGREST), if participants would be automatically considered for membership. The SCICOM chair confirmed they would be included in the initial mailing list to be kept informed. A MIACO participant asked if the report or guidelines from WGFISHC have a timeline for publication. The SCICOM chair confirmed that the report was expected to be published in the near future.

A MIACO participant asked for a question to be communicated to a chair of WGBEC, whether there are plans to integrate the results of their work into the fish stock assessments. The ACOM chair answered that WGBEC are currently researching the impact of contaminants on biology of species further work would be needed to extrapolate to the population level. The SCICOM chair added that WGBEC examination was a first level of examination into contaminants significance in causing fish mortality, and that if impact on management of fish stock is found through the work then it would be integrated.

A MIACO participant thanked the chairs for the presentation and asked if the process of creating a workshop prior to forming a working group was a definitive process. The SCICOM chair noted that while it wasn’t a requirement, it is a proven track to have a workshop initially to explore capacity for further work, and noted that having a link through to advice was not a requirement but seen as a benefit, though science needs are important too.

A MIACO participant commented that since there are other organisations and research groups working on some of these science topics, they were thankful for the highlights and mentioned that PEW were working on developing tools within an MSE framework that could be applied to unique life-history attributes of species such as squid, and encouraged collaboration with WGCEPH. They also mentioned potential links with partners’ work on similar topics within an MSE context regarding impacts of climate change on parameters used in fish stock assessments e.g. <https://harveststrategies.org/>. The SCICOM chair thanked the comments and welcomed any interest to ICES and the relevant WG chairs.

5 Advisory plan and quality action plan

The ACOM chair presented an overview of progress on the Advisory plan and quality action plan in 2025. Nine actions from the advisory plan are on target, 19 are in progress, and three require additional attention, with key focus areas including the regional database and estimation system, training, and feedback mechanisms.

Efforts are underway to broaden expertise and diversity within advisory groups, address over-reliance on individuals, and support expert well-being, including mentoring and succession planning.

The quality assurance action plan launched in 2025 is already leading to improved transparency, reproducibility, and consistency, with strict adherence to deadlines and enhanced peer review and audit processes to reduce avoidable errors. A new tool for estimating reference points underwent a formal code audit, leading to improvements, better documentation, and training materials.

The process for correcting and communicating advice errors was strengthened. In 2025, six changes to headline advice were made, mostly due to code or data errors. The work of the Quality Action will continue as part of Priority Area 1 in the Advisory Plan (ICES, 2025).

6 Moving toward ecosystem and climate informed advice

MIACO participants were divided into four subgroups to enable subgroup discussions. Each subgroup was led by an ACOM vice chair, with support from Secretariat staff. Subgroups 1 and 2 discussed ecosystem and climate informed fishing opportunities advice, considering four specific options:

1. Implementation of ecosystem-informed single-stock reference points
2. Inclusion of qualitative, risk- and objectives-based statements in advice
3. Provision of single, multispecies or mixed fisheries catch scenarios conditioned for observed, anticipated, or projected climate change or ecosystem effects.
4. Forecast of long-term impacts of climate change in fisheriesXplorer

Subgroups 3 & 4 discussed and ranked short-term risks of failing to achieve high-level ecosystem objectives, and identified potential conflicts/synergies between these objectives and the main human pressures currently identified in ecosystem overviews. The objectives considered were:

1. Climate change mitigation and adaptation
2. Biodiversity conservation and restoration
3. Sustainable seafood production
4. Pollution reduction
5. Managing competition for marine space
6. Maintaining economic and social benefits from marine ecosystem services (human dimension)

Afterwards, all meeting participants gathered to report back on subgroup discussions.

Subgroups 1 & 2: An ACOM vice chair summarised that these subgroups generally agreed the third option was most favoured, particularly for its impact, while options one and two were also considered promising due to their feasibility and the availability of existing information. Option four was seen as more relevant for long-term planning.

Participants discussed adding feasibility as a criterion for evaluating options, noting that options with existing data or frameworks were considered more actionable. The group also valued qualitative statements but wanted further clarity on their use in the process. It was also noted that the highest-ranked options were those expected to have a direct impact on advice, while others were seen as complementary or less directly influential.

Subgroups 3 & 4: One of the subgroups, identified a higher short-term risk of failing to achieve climate change adaptation and mitigation, followed by competition for marine space (high impact), while biodiversity conservation and restoration was highlighted as having a high likelihood of short-term failure. Another subgroup highlighted the difficulty of scoring ecosystem objectives given the breadth of participants roles and geographies, suggesting a focus on management measures/levers may be most useful. Participants emphasised that overviews should serve as a compass for policy and management, helping to identify key issues without prescribing specific actions, and should be clear about their objectives. The group discussed the challenge of reflecting ecosystem complexity in overviews while ensuring they remain practical for users, including managers and stakeholders. A subgroup completed the trade-offs table, noting that different interpretations of objectives and pressures could lead to conflicting results. Potential trade-offs were identified for all ecosystem objectives and six of the eight human pressures

considered (i.e. all but noise and nutrient and organic enrichment). Most trade-offs were identified in relation to the human dimension objective to maintain economic and social benefits from marine ecosystem services.

7 Next steps towards WKREFRAME

The ACOM vice chair presented the ongoing work on the revision of the reference point advisory framework, the work plan for the Workshop on ICES reference points and the advice rule WKREFRAME, and the integration of ecosystem considerations and stakeholder engagement in the process. The revision process began in 2021 and has already led to the implementation of some recommendations, with more significant changes expected in the coming years. The group aims to ensure that advice requesters and stakeholders are kept informed and engaged in the process.

- **Decoupling of Reference Points:** The group discussed the decoupling of biological reference points and control points in the advice rule, emphasising the need for clear criteria to define new reference points such as F_{MSY} and B_{safe} , and the importance of agreeing on terminology to avoid confusion in policy implementation.
- **Ecosystem Considerations:** Participants highlighted the necessity of incorporating ecosystem considerations into the advice framework, including the roles of individual stocks within the food web and the impact of climate change on the stocks, to ensure that the framework can adapt to changes in stock productivity and environmental conditions. Participants raised the issue of what can be done in the short-term to communicate relevant ecosystem and climate factors for individual stocks, acknowledging that the full framework revision will take some time and that managers need transparent information in the meantime. While providing a standardised list of relevant factors for each stock is conceptually straightforward, implementing it across the 260 stocks ICES provides advice for would require significant effort from stock assessors and wider ICES community, and there is currently no consensus on prioritising this approach. It was suggested that a pilot approach could be taken by applying the method to a subset of stocks to evaluate its usefulness before considering broader implementation, reflecting the group's intention to balance transparency with practical constraints.
- **Technical Tools and Methodology:** A new tool for calculating reference points has been developed and will be introduced, it offers greater flexibility and accounts for the time lags between assessment and advice, which is crucial for risk management; this tool has been reviewed by a subgroup of the Methods Working Groups ([MGWG](#)) and should be ready for use in upcoming benchmarks.
- **Stakeholder Engagement and Work Plan:** Stakeholders and advice requesters will be engaged through a series of webinars and expert guidance prior to the WKREFRAME. ACOM will discuss the work plan in March, but it will likely be preparatory meetings/webinars before the main workshop scheduled for 8-12 of February 2027 to ensure all key participants are enabled to contribute effectively.
- **Ecosystem Productivity, Reference Points, and Multi-Species Considerations:** The implications of changing ecosystem productivity on reference points were discussed. There were concerns about the risk of using truncated time series and degraded ecosystem states as baselines, which could lead to lower management ambitions; ICES clarified that the intention is not to lower ambitions but to ensure reference points reflect current conditions while retaining historical information. There is ongoing research into dynamic reference points and harvest control rules that can adapt to changing productivity without truncating time series, aiming to maintain sustainability and avoid loss of valuable data. The inclusion of multi-species effects is desirable, but the science for this is not yet

mature enough for operational inclusion, though the ICES hopes to incorporate such considerations as research progresses.

- **Rebuilding Strategies and Stakeholder Concerns:** Regarding the requirement to recover stocks rapidly when below B_{lim} , the ACOM vice-chair explained that ICES provides advice on fishing mortality rates to enable recovery, with ongoing discussions about integrating rebuilding scenarios into future advice. These will be discussed with stakeholders before summer, ensuring their input is considered in the process. Industry stakeholders expressed concerns about the operational practicality of advice, particularly regarding zero catch recommendations and the need to account for unavoidable discards, with ACOM noting that these issues are related but will be addressed in separate forums focused on rebuilding strategies.

Follow-up tasks:

- **Incorporation of Ecosystem Considerations into Advice:** Trial implementation integrating relevant ecosystem and climate factors into the assessments and advice for a prioritised list of stocks, to assess feasibility and usefulness before wider rollout.
- **Stakeholder Engagement in Terms of Reference Revision:** Engage advice requesters and stakeholders in discussions prior to WKREFRAME.

8 Update on WGENGAGE

The chair of the Working Group on Stakeholder Engagement (WGENGAGE) presented the group's main objectives and progress. WGENGAGE held its first meeting in March 2025 and currently has 55 members from 15 countries which include among others, researchers, industry representatives, advisory councils and NGOs.

The main aim of WGENGAGE is to support the implementation of the ICES stakeholder engagement strategy. Observers to ICES advice were encouraged to read the ICES stakeholder engagement strategy ([ICES, 2023](#)).

WGENGAGE defines successful stakeholder engagement by four key criteria. First is a diverse pool of competent, reliable and committed stakeholders. Second is stakeholders that contribute effectively based on understanding of the process and clear expectations. Third is, ICES delivering better science and advice by integrating essential knowledge and providing areas for meaningful dialogues. Fourth is traceability of engagement process, through monitoring and evaluation.

WGENGAGE has set nine priorities based on the three terms of reference (ToR) of WGENGAGE. The ToRs revolve around the issues of participation and legitimacy of stakeholder participation, monitoring ICES' work and progress to be able to provide recommendations for improvement where necessary and finally, creating resources as guidance and support for the ICES community in how to engage with stakeholders effectively.

An example presented of how ICES can add value is with the Kunming-Montreal Global Biodiversity Framework (KM-GBF), as Target 1 of KN-GBF emphasizes inclusion and participatory approaches for effective spatial planning and management.

WGENGAGE chair concluded presentation by encouraging observers to ICES advice to apply to become working group members and attend the next WGENGAGE meeting in May 2026.

Discussion

MIACO participants and WGENGAGE members shared that the current membership comprises predominantly of researchers and therefore encourages more people from MIACO to apply to become member of WGENGAGE, especially from NGOs, industry and other actors in the field to ensure balanced representation in the working group.

Chair of WGENGAGE supported this and highlighted that there is need to highlight to industry of the value of being involved in WGENGAGE.

Chair of WGENGAGE shared that there is a guide on [WGENGAGE website](#) how to apply to become a member. It was noted that it is currently unclear to people new to the ICES network how to become a member of an ICES working group. It was highlighted that this guide also includes the collective action theory which allows for more inclusive and flexible participation, based on time available, interest area and contribution level of members.

ACOM chair stated that there are still challenges and weaknesses of ICES in operationalizing stakeholder engagement. Therefore, the role of WGENGAGE is important in implementing the stakeholder engagement strategy to ensure meaningful engagement of stakeholders at critical moments. ACOM chair stressed ICES' commitment in stakeholder engagement, and that it was particularly important in evolving ICES processes, such as WKREFRAME.

9 Interactive online advice products

The current suite of online advice tools was presented, and user feedback gathered through an interactive survey. Challenges and opportunities related to application usability, advice version control, and the transition from pdf to interactive online formats were discussed.

The range of online advice products includes [fisheriesXplorer](#), [adviceXplorer](#), [SEAwise EBFM toolbox](#) and various [data portals](#). Their roles in advice delivery, support, and data dissemination were explained. The rationale for moving online was to better handle increasing complexity and facilitate user navigation.

User Engagement and Poll Results: Participants engaged in a [live poll](#) to provide feedback on their usage of the tools, revealing that most had at least explored the apps, with [fisheriesXplorer](#) and [adviceXplorer](#) being the most commonly used and valued. Most respondents (80%) plan to use ICES interactive applications in the future.

1. How often do you use ICES interactive apps? (multiple choice, pick one)

● Daily	0
● Weekly	1
● Monthly	4
● Yearly	9
● Less than once per year	3
● I have never used ICES interac...	8

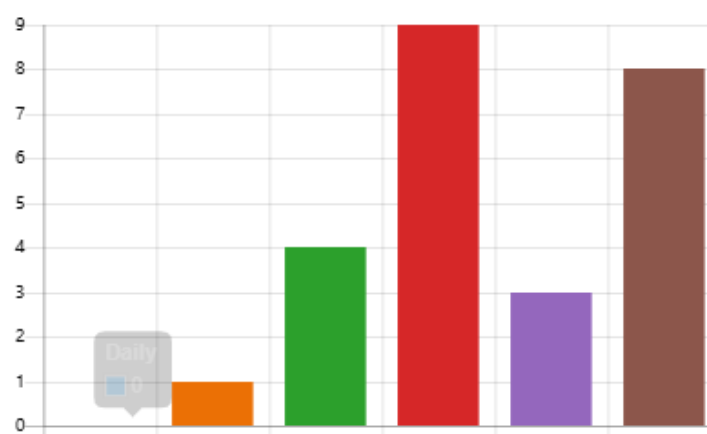


Figure 2. Example feedback from [live poll](#) at MIACO.

User Needs and Challenges: Feedback indicated that while many found the tools somewhat easy to use, some still relied on PDFs for annotation and sharing, and others faced difficulties such as navigation, lack of orientation, and missing features like linking to working group materials.

Suggestions for Improvement: Suggestions included adding features for annotation, improving navigation, providing more orientation or instructions, and integrating links to working group documents, with the development team noting these for future enhancements. Participants also mentioned that the “Issues relevant for the advice” and “Quality of the assessment”

sections could be a useful addition to adviceXplorer, as well as options to export a graph with a value 'tag' displaying on it (as you get when you hover over a value in the [adviceXplorer](#)). Participants also asked whether or not it was possible to display more than one stock at a time, and if users could create a list of 'favourites' that are always present for them (ICES explained that this would likely require a user ID and login).

Subgroup discussion

MIACO participants then engaged in focused subgroup discussions on specific apps to get further feedback. The main outputs of those subgroups is summarised below.

Subgroup 1 adviceXplorer

Six out of seven of the subgroup group had looked at the app and 1/7 was familiar with the app since its release.

List of main interests communicated:

- Make mobile friendly
- Links to national catch information
- Links to TAC information
- Links to EG reports that provide knowledge basis of advice e.g. via DOI
- Links to upcoming benchmark dates for stocks

Subgroup 2 fisheriesXplorer

The overall response to the app was highly positive, but a lot of discussion centred around version control, archives, DOI s, citations etc., essentially how to use evidence from fisheriesXplorer and ensure people can refer back to it.

Alignment of the text to the figures was also discussed and how this would be managed.

There were requests for:

- Ability to view information on a stock level, rather than aggregated to species level (Landings tab)
- Fleets and Metiers
- Spatial information on fisheries - "If this is to provide an overview of fisheries, then spatial plots are really what I need to get an overview"

We also discussed the pros/cons of replacing the PDFs with an app. There was a clear message that the PDFs should be kept. It was suggested that offline information was extremely helpful, even if it didn't necessarily have the same structure as the existing overviews. The concern about losing the PDFs was also about a potential lack of acceptance from ministries and decision makers who needed something on paper.

Subgroup 3 fisheriesXplorer

The differences between landings by species (official statistics) v's stocks (ICES estimates) and the differences between landings and catches was discussed. Including TACs on landings figures was suggested. Customizable download options would be useful (including option to add user-notes). Ability to downscale information at countries/area level might be useful.

Future priorities suggested included:

- Metier-level resolution useful for all information/modules

- Minimising text and noise by using drop down menus to select a guild (in the “landings/status” modules) or a country (“who is fishing” tab). The who is fishing section needs visuals or a table (text is too dense). Introduction section can be shortened by 1/3 by removing “This overview provides...” and key signals text is presently not attractive.
- STECF information on landings values.
- Catch and effort by ICES rectangle and gear to show the relative importance of different areas

Clear status definitions are needed, e.g. is MSY status in the table based on point value or within the MSY range? The term “app” suggests it is intended for mobile phone use; there was a suggestion to rename e.g. dashboard. Some users experienced problems with zooming in/out function.

Subgroup 4 NEAFC Catch Explorer

Participants were provided with a background to the request which led to the development of the app, along with a demonstration of how it can be used as a decision support tool to investigate fishery distribution and spatial overlaps in catches. Feedback was again positive, but comments followed a slightly different line to those received from MIRIA. There was agreement that the app delivered on its intended use. It was felt it could be of more use to other stakeholders if the tool showed other features, for example NEAFC existing fishery areas and VME closures. There was a comment that the tool exists in isolation, without a link back to the advice which it is part of, and that this should be included in future products. Like the feeling of MIRIA, it was agreed that the tool was hard to find, and more prominence would improve its utility.

10 Biodiversity data, science and advice

The ACOM vice chair gave a presentation on ICES biodiversity science, data and advice. MIACO was updated on

- i) ICES science, data and advice of relevance to biodiversity and its conservation and restoration, and
- ii) ii) ICES initiatives to increase the scope, scale and impact of its biodiversity science and advice, to meet current and emerging evidence and policy needs.

The presentation included, amongst others: conservation and restoration science topics, examples of relevant recurrent advice (ecosystem and aquaculture overviews, VME advice), plans to establish a Strategic Initiative on Biodiversity Science and Advice SIBSA, the many uses of biodiversity data collated and made available by ICES Data Centre, completion of a Workshop on Nature Restoration and Recovery Recovery (WKREST) and plans for a subsequent working group (WGREST), and the content of three new advice requests on topics linked to recovery and restoration.

MIACO were invited to give feedback on ICES plans for advancing biodiversity science and advice, especially the extent to which these plans address their existing and expected interests, questions and concerns.

The meeting welcomed progress made by ICES in advancing biodiversity science and advice. There was an issue raised about risk-based advice. MIACO was informed that the areas of ICES work related to risk-based advice may include proposed thresholds for indicators of pressure or state with an associated range of uncertainties to give the requesters an opportunity to take a decision about the risk tolerance they would accept. These different threshold options will be presented as choices.

It was explained that the work planned within SIBSA is unlikely to directly contribute to the fishing opportunities advice. Though, the fishing opportunities advice includes the conservation considerations section, which could be further adapted and amended. Fishing opportunities and biodiversity topics are brought together in Ecosystem Overviews, which will be further advanced to include management objectives and indicator-based approaches to measure the progress towards the objectives. The implementation of the Framework for Ecosystem Informed Science and Advice (FEISA) is not only the risk-based approach, but also establishing operational linkages between the different types of advice.

In relation to the question as to whether SIBSA will take into account EBFM for endangered species conservation, i.e., whether EBFM is part of the solution, the wider issue of thresholds for biodiversity was discussed. It was suggested that a recovery trajectory itself might be a suitable management objective. As to whether you meet a calculated quantitative threshold is a secondary question, and maybe something that changes over time. Thus, an iterative approach might be needed. EBFM, which considers both ecosystems and fisheries, should be theoretically suitable framework in this regard, by also considering the associated trade-offs. It's not trying to maximise, but rather trying to improve social and economic benefits, while also reaching biodiversity targets. ICES has previously issued advice on relevant topics, such as advice to NEAFC on fisheries management, and to the EU on VMEs. It was finally suggested that the approach to EBFM should be much broader and more holistic than just focusing on endangered species by-catch.

In terms of the area-based management tools in the high seas (BBNJ) and potential delivery of input to designate network of area-based management, ICES has previously provided relevant advice to NEAFC and is involved in the OECM process. ICES also maintains the VME database.

Thus, ICES capacity is good to respond to questions about area-based management in BBNJ, if asked.

It was concluded that ICES have moved from describing biodiversity impacts to new areas of scientific and advisory work – especially on recovery and restoration. This move was driven by policy developments, and has led to more complex questions, on topics such as connectivity, recovery rates, climate change impacts on prospects for recovery and restoration and more generally, cumulative pressures and impacts. ICES has moved to engaging at multiple levels and developing SIBSA to establish better and more efficient connections both internally and externally. A truly holistic approach to biodiversity should be considered, rather than focussing on impacts on some components of biodiversity. The wider approach may encompass trade-offs and ways of balancing biodiversity conservation and socioeconomic objectives. ICES is more generally considering how to engage and contribute to BBNJ activities, potentially also through SIBSA.

11 Where next with MSEs in ICES?

The ACOM vice chair led a comprehensive discussion on the current state, challenges, and future directions of Management Strategy Evaluation (MSE) within ICES, with questions focusing on definitions, empirical and model-based harvest control rules, international examples, and the need for capacity building and stakeholder engagement.

- **MSE Definitions and Components:** MSE is a simulation-based approach to evaluate management strategies before implementation, consisting of an operating model (simulating the fishery system) and a management procedure (describing the process to provide advice). The approach aims to account for uncertainties and achieve predefined management objectives, marking a shift from seeking the best model to finding robust management procedures.
- **Empirical vs Model-Based Harvest Control Rules:** ACOM distinguished between model free empirical harvest control rules, typically based on abundance indices and biological data (e.g., category 3 stocks), and model-based rules, which use assessment models to estimate stock status and set catch limits. The discussion highlighted that empirical rules can still align with objectives like MSY if their performance is evaluated against operating model outputs.
- **International and ICES Case Studies:** several international and ICES examples were presented, such as Greenland halibut in North Atlantic Fisheries Commission NAFO and North Atlantic albacore in the International Commission for the Conservation of Atlantic Tunas (ICCAT), illustrating the use of both empirical and model-based rules, the challenges of complex models, and the adoption of shortcut approaches when full feedback loops are impractical. The importance of using simpler models in management procedures to avoid overcomplicating the advice process was emphasised.
- **Stakeholder Engagement and Capacity Building:** MIACO members stressed the importance of involving managers, stakeholders, and NGOs early in the MSE process to ensure buy-in and predictability. One MIACO participant highlighted the need for capacity building within ICES and among stakeholders, mentioning the FAO's new learning tool as a resource for those less familiar with MSE concepts.
- **Future Directions and Recommendations:** going forward ACOM will consider expanding MSE implementation beyond special requests, to simplify advice provision, considering empirical rules even for data-rich stocks, and exploring multi-annual advice. The need for ongoing communication between scientists, managers, and stakeholders, and for integrating ecosystem and climate considerations, was also discussed.

Follow-up tasks:

- **Capacity Building for Management Strategy Evaluation:** MIACO should review and consider the FAO's newly released comprehensive learning tool on harvest strategies or management procedures and MSE basics to support capacity building for scientists, managers, stakeholders, and other interested parties. The link to the FAO MSE learning tool is here <https://elearning.fao.org/course/mp-series-en>.

12 VME framework

The ACOM Vice Chair provided an update on the benchmarking process for VME advice, detailing recent methodological improvements, upcoming workshops, and the integration of new data and analytical tools.

Benchmarking Process and Rationale: The ACOM Vice Chair outlined that the VME advice method was last benchmarked in 2022, and a new full benchmark is scheduled for 2027 to ensure advice remains based on the best available science. Preparatory actions include reviewing new research, updating data, and responding to policy developments and stakeholder feedback.

Recent and Ongoing Methodological Improvements: Completed actions include a review and correction of historic VME data, increased transparency through code sharing, and the development of intermediate data products. Ongoing work involves preparation for workshops on static gear impacts, improvements to the VME index, and the adoption of new spatial analysis methods using equal-area grids.

Follow up:

One MIACO participant inquired about the inclusion of benthic-pelagic coupling and the effects of fishing on nutrient exchange in the benchmark. The ACOM Vice Chair clarified that while these topics are recognised, the science is not yet mature enough for inclusion in the benchmark process but may be considered in future steps.

One MIACO participant asked about the integration of socioeconomic impacts in the benchmark. The ACOM Vice Chair responded that current ICES advice focuses on the distribution of VMEs and does not include socioeconomic analysis, which remains within the remit of STECF, though future requests may evolve.

One MIACO participant raised concerns about data limitations for assessing static gear impacts and asked about workshop accessibility. The ACOM Vice Chair confirmed the workshop is open to observers and acknowledged that while methodologies can be developed, data availability may constrain their application, necessitating future investment in data collection.

13 New ICES strategy

The ICES General Secretary presented on the ongoing process to update the ICES Strategic Plan, focusing on aligning objectives, integrating stakeholder feedback, and preparing for the 125th anniversary. Some MIACO participants emphasised the importance of coherence, communication, and stakeholder trust throughout this process. The General Secretary described the work aimed at clarifying priorities, improving communication, and integrating various plans and roadmaps. The process involves internal alignment, outreach to the community, and iterative feedback through the Science and Advisory Committees and at the ICES Annual Science Conference.

The draft plan will focus on tangible objectives and metrics to track progress, with a timeline extending through the 125th anniversary in 2027. The strategy aims to balance diverse needs with available resources and adapt to future uncertainties.

The General Secretary also emphasised the importance of member country events, broader participation in the Annual Science Conference, and ongoing engagement to ensure the strategy reflects the community's needs.

Participants raised points about apparent contradictions in ICES science and advice, for example in the Baltic Sea. The ACOM Chair encouraged participants to reach out to ICES to identify where processes and products can be improved. Stakeholder input in the ICES system is key.

14 New advisory workplan 2026

A brief overview of the advice work plan for 2026 was provided by Sarah Millar, Head of Advice Department, focusing on the accessibility of information throughout the year.

It was explained that the scheduling of deliverables is based on the demands and needs of advice requesters and that the planning involves coordinating various elements such as advice drafting groups (ADGs), ACOM web-conferences, and ensuring adequate time for quality assurance before the final release of advice. The advice department is increasingly collaborating on logistical and planning tasks to remain agile and responsive.

ICES has updated and migrated its SharePoint site to a new platform which will make access to various resources easier. Links to working calendar views, latest advice, and release dates have been transferred from the old site. Users were encouraged to familiarize themselves with the new [MIACO SharePoint site](#).

A comprehensive overview of the advice processes is now available via a [Power BI tool](#). This link includes all necessary details for expert groups meetings, ADGs, web conferences, and upcoming advice release dates for 2026.

An advice activities page on the website provides updates on workshops, advice releases, and changes to headline advice. No login is required for access, and notifications can be subscribed to for real-time updates.

15 Wrap up and close

The ACOM chair summarised the meeting's key discussions. ICES provided a comprehensive review of the ICES advice activities in 2025, highlighting the advisory committee's structure, the advice production process, the range of advice delivered, and the mechanisms for ensuring quality and transparency. This year a new aspect was a meta-analysis of trends in stocks in the ICES region, this shows progress towards more sustainable fishing rates but also an increased number of stocks with weak recruitment and with zero catch advice.

The MIACO discussions focused on providing useful feedback on:

- the meta-analysis,
- emphasising the importance of integrating other objectives (beyond MSY) in ICES advice, raising methodological concerns and stocks in need of benchmarks
- Credibility and confidence in advice
- The evolution and current state of stakeholder engagement
- Development and Integration of Ecosystem and Climate Informed Advice

ICES put a spotlight on new and ongoing ICES science groups focused on biodiversity, cumulative impacts, fish distribution, carbon, animal welfare, restoration and existing groups including WGCEPH, WGOOFE, WGBEC and WGMARS.

The advisory plan is on track and the Quality Action Plan has delivered results in 2025 and will be integrated into the advisory plan in future.

MIACO participated in subgroups and interactive polls around Moving toward ecosystem and climate informed advice and Interactive online advice products which were considered useful and engaging. The WGEAGE chair outlined the working group's progress on stakeholder engagement, the group's composition, objectives, and actions, with MIACO reflecting on implementation challenges and need for broader participation from NGOs and fishing industry.

The chair outlined the history and objectives of the WKREFRAME, noting that the revision process began in 2021 and ACOM will have discussions in February and March to set out a plan, but ICES are aiming for a workshop in Feb 2027. Underlining that ICES will not lower the ambition for stock/ecosystem recovery, but we do need to acknowledge that the ecosystem has change.

MIACO were provided some food for thought around the use of MSEs in ICES and capacity building was seen as very important. The plans for the upcoming VME benchmark and ICES strategy development were shared and engagement in the process was encouraged.

Feedback on Meeting Format: Participants praised the use of subgroups for interactive discussion, suggested improvements for sharing outputs across groups, and requested more advance notice for background materials. The value of webinars and summary sessions for broader engagement was also highlighted.

The chair thanked the ICES team for their work and support before and during the meeting and all participants for the useful and inspiring discussions.

Annex 1: List of participants

Name	Institute
Alan Haynie	ICES
Aleksandra Bavdaz	Sensfish
Alexandra Philippe	NWWAC
Alexandre Rodriguez	LDAC
Anton Angwald	Stockholm University
Aodh O'Donnell	IFPO
Arnaud Peyronnet	DGMARE
Ashley Wilson	Pew Trusts
Begona Santos	EFCA
Carl O'Brien	ICES
Carolina Silveira	CCRUP
Catarina Abril	Sciaena
Cathrine Pedersen Schirmer	FishSec
Chloe Pocheau	SWWAC
Christian Tsangarides	LIFE
Colm Lordan	ICES
Cristina Morgado	EFCA
Dale Rodmell	EEFPO
Daniel Steadman	Pew Trusts
Daniela Costa	CCRUP
David Curtis	Bass Angling Conservation
David Reid	ICES
Dorleta Garcia	ICES
Elena Balestri	Scottish Fishermen's Federation
Elspeth Macdonald	Scottish Fishermen's Federation
Ewa Milewska	BSAC
Gjert Endre Dingsor	Norwegian Fishermen's Association
Hannaa Gatta	Sensfish
Hannah Alexandersson	BalticWaters
Ilaria Bellomo	NWWAC
Irene Prieto Castro	NWWAC

James Hinchcliffe	EFFOP/Marine ING
Jan Kappel	EAA
Jarek Zielinski	BSAC
Jasmine Finbow	Blue Marine Foundation
Jean-Christophe Vandeveld	Pew Trusts
Jean-Marie Robert	NWWAC
Jenni Grossman	Client Earth
John Lynch	NWWAC
Joshua N Boampong	Norwegian Arctic University
Jules Danto	EAPO
Justyna Zajchowska	Pew Trusts
Katarzyna Stepanowska	West Pomeranian University of Technology
Kateryna Urbanovych	NSAC
Kenny Coull	SWFPA
Kim Stobberup	MSC
Kurt Rachlitz	NTNU
Leon Bouts	EFCA
Lisa Ann Libungan	Fisheries Iceland
Lisette Victorero	Deep sea conservation coalition
Marie-Julie Roux	ICES
Merel den Held	Pelagic AC
Michael Andersen	Danish Fishers Producer Organisation
Mike Park	SWFPA
Mo Mathies	NWWAC
Mogens Schou	Mogens Schou on Fisheries Management
Nicolas Sturaro	DGMARE
Paul Macdonald	SFO
Paul Thomas	Pelagic AC
Paulina Ramirez-Monsalve	Niva
Raluca Ivanescu	DGMARE
Rufus Danby	SWFPA
Sebastian Linke	University of Gothenburg
Simon Jennings	ICES
Solene Prevalet	NSAC

Susana Godinho	EFCA
Tamara Talevska	NSAC

Annex 2: Meeting agenda



MIACO

Doc 01

Version 1, 15 December 2025

**Meeting between ICES and Advisory Councils and other Observers
(MIACO)**

Thursday 22rd (13:00) – Friday 23th (13:00) January 2026

Hybrid: physical & online

Chair: Colm Lordan

Draft Agenda

- 1) Welcome and opening of the meeting
- 2) Adoption of agenda
- 3) Overview of ICES advice produced in 2025
- 4) Spotlight on ICES science groups
- 5) Advisory Plan & Quality Action Plan
- 6) Moving toward ecosystem and climate informed advice
- 7) Next steps towards WKREFRAME
- 8) Update on WGENGAGE
- 9) Interactive online advice products
- 10) Biodiversity data, science and advice
- 11) Where to next with MSEs in ICES?
- 12) VME framework
- 13) New ICES strategy
- 14) ICES Advisory Work-plan 2026
- 15) Wrap up and close

