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Date: 2 October 2026
PelAC reference: 2627PAC03
Subject: Request to ICES for Long-Term Management Strategy for Northeast Atlantic Mackerel

Dear Ms. Charlina Vitcheva,

Please find in annex the PelAC's suggestion for a Request to ICES for Long-Term Management Strategy for Northeast Atlantic Mackerel.

We hope that you can take the content of the advice into consideration,

Kind regards,



Esben Sverdrup-Jensen
Chair of the Pelagic Advisory Council





Context

The Pelagic Advisory Council (PelAC) is closely monitoring the state of the Northeast Atlantic mackerel stock. The results of the 2025 ICES benchmark, along with the most recent scientific advice, confirm a concerning situation: a prolonged decline in spawning stock biomass and a stock level now estimated to be just above the biological safety limit (*Blim*) [1]. This trend occurs in a context where the persistent lack of a global sharing agreement among coastal states continues to result in catch levels exceeding ICES recommendations, thereby undermining stock recovery efforts.

The PelAC believes this situation calls for an ambitious and sustainable response. In this regard, the development of a Management Strategy Evaluation (MSE) appears to be the most appropriate tool to support the design of a long-term management strategy for the stock. However, PelAC emphasizes that an MSE should not be viewed merely as a technical exercise to compare different harvest control rules. Instead, it must be a collective reflection process to define management objectives, assess trade-offs between these objectives, and test the robustness of different strategies against the biological, environmental, and governance uncertainties that currently characterize this stock and fishery [2].

Part 1: General Principles

Long-Term Vision for Management

The PelAC believes that the development of an MSE for mackerel must align with a long-term vision for marine resource management. This vision should prioritize:

- The ability for a depleted stock to rebuild/recover.
- Ensuring a healthy stock biomass and the long-term sustainability of fishing activities.
- Ensuring healthy marine food webs through the progressive integration of ecosystem considerations into decision-making.
- Ensuring stocks and fisheries are resilient to a changing environment.
- Robustness to key biological, environmental, and governance uncertainties/challenges.

The work conducted during the PelAC MSE workshop (February 10, 2026), along with recent developments in ICES' FEISA framework, demonstrate that it is now possible to gradually expand traditional management approaches while maintaining the scientific rigor required for decision-making [2][4]. PelAC supports a pragmatic approach—integrating ecosystem considerations into management procedures incrementally rather than waiting for the development of comprehensive ecosystem models, which could delay the adoption of measures necessary for stock recovery.

The PelAC also believes that the effectiveness of any future management strategy will largely depend on its acceptability and understanding by all stakeholders. In this regard, transparency in the process and meaningful stakeholder involvement are essential for the success of the MSE.





Request to ICES by 5 Coastal States

The PelAC notes that Annex 1 of the agreement signed in December 2025 by the Faroe Islands, Iceland, Norway, and the United Kingdom—regarding a request to ICES in 2026, to which Greenland has since been added—explicitly acknowledges the current lack of a precautionary long-term management strategy (LTMS) for the Northeast Atlantic mackerel stock. The request calls for an evaluation of different long-term management options. However, PelAC considers this request relatively limited compared to the standards now associated with comprehensive MSE processes.

The request primarily focuses on evaluating combinations of management parameters, including:

- A target biomass (*B trigger*) ranging from 3 to 6 million tonnes,
- A range of target fishing mortality (*F*) values,
- A harvest control rule based on these parameters,
- General objectives such as maximizing catches, reducing the risk of falling below *Blim*, and ensuring catch stability; and
- Mechanisms to limit interannual TAC (Total Allowable Catch) variations.

The proposed evaluation criteria (performance indicators) remain relatively conventional, focusing on average biomass, average catches, interannual variability in catches and biomass, and the risk of falling below *Blim*.

The main innovative element of this request is the inclusion of scenarios simulating a situation where no long-term management strategy is adopted, and catches systematically exceed ICES advice by 10%, 20%, or 30%. PelAC considers this explicit recognition of potential exceedances of scientific advice (i.e. implementation error) a useful evolution compared to previous exercises. However, such exceedances can no longer be considered exceptional circumstances, given the situation observed in mackerel stock management over the past several years.

The PelAC observes that the request does not explicitly evaluate the cumulative consequences of past exceedances of scientific advice on the current state of the stock or its future biological parameters. In particular, there is no examination of how prolonged periods of catches above recommended levels may have contributed to:

- The observed deterioration of spawning stock biomass,
- The stock's reduced resilience, or
- Recruitment prospects.

Additionally, the request does not include scenarios exploring potential interactions between exploitation levels and the effects of climate change, changes in natural mortality, or shifts in the stock's demographic structure.

The PelAC therefore believes that the future MSE should go beyond evaluating variations of a single harvest control rule. It should incorporate a broader set of operational objectives, biological and environmental uncertainties, governance scenarios, and performance indicators, in line with the recommendations from the PelAC MSE workshop [5] and recent ICES work on ecosystem-based management and risk assessment approaches [4].





Management Objectives

The PelAC emphasizes that defining explicit management objectives is a fundamental step in the future MSE. These objectives should reflect not only the conservation objectives of the stock but also the expectations of managers, fishers, and society.

1. **Stock Recovery as a Priority:** The future management strategy must demonstrate its ability to restore biomass above *Blim* within a reasonable short-term timeframe and ensure the stock rebuilds to levels capable of producing the maximum sustainable yield in the medium to long-term (i.e. above *MSY* *Btrigger* *BMSY*).
2. **Stable and Predictable Fishing Opportunities:** The selected strategy should maintain stable and predictable fishing opportunities, to the extent compatible with biological objectives. PelAC considers catch stability a key factor for the economic viability of fishing businesses and the planning of fishing activities.
3. **Demographic Structure of the Stock:** PelAC believes that the age structure of the stock deserves particular attention. Indicators such as the average age of individuals in the population and catches as well as information on maturity at age can provide important complementary information on the stock's resilience and its ability to cope with future fluctuations in recruitment [2][3].
4. **Ecological Role of Mackerel:** The ecological role of mackerel in the Northeast Atlantic ecosystem, including in the food web, should be progressively considered in evaluating the performance of different management strategies. This approach aligns with the FEISA framework developed by ICES and discussions within PelAC on implementing more ecosystem-based management [3][4].

Uncertainty Assessment

One of the main advantages of an MSE is its ability to evaluate the robustness of management strategies in the face of uncertain future conditions. PelAC believes that a sufficiently wide range of assumptions must be examined in this exercise.

- **Recruitment Uncertainties:** With stock status close to *Blim*, the PelAC is concerned that an extended period of recruitment failure could become reality. As such, the PelAC explicitly request management procedures to be robust against extended periods of recruitment failure.
- **Climate Change Impacts:** PelAC considers it is essential to integrate the potential consequences of climate change on stock dynamics. Changes in growth rates, natural mortality, spatial distribution, and seasonal migration patterns should be accounted for in robustness analyses to ensure that selected strategies remain effective in a changing environment [2][3].
- **Natural Mortality and Ecological Interactions:** Simulations should examine the impact of different assumptions regarding natural mortality and ecological interactions. Work presented to PelAC shows that these factors can significantly influence the ability of management strategies to simultaneously achieve biological and ecosystem objectives [3].





- Exceedances of Scientific Advice: PelAC believes it would be useful to explicitly test the consequences of scenarios where actual catches exceed ICES-recommended levels. Recent experience demonstrates that this hypothesis cannot be ignored and must be considered in assessing the robustness of future management strategies.

Governance and Stakeholder Participation

The PelAC believes that the success of an MSE depends as much on the quality of the process as on the quality of the models used. In this regard, stakeholder participation must be organized from the earliest stages and continue throughout the process.

- Representatives from the fishing industry, NGOs, managers, and scientists should contribute to:
 - Defining management objectives,
 - Identifying performance indicators,
 - Identifying scenarios to test candidate management strategies against, and
 - Interpreting and providing feedback on MSE results.

This approach would foster a shared understanding of the trade-offs associated with different strategies and strengthen the legitimacy of future decisions.

PelAC notes that this approach aligns with the recommendations from its MSE workshop and the recent guidance presented by the European Commission on developing a long-term management strategy for mackerel [2].

Conclusion

The PelAC considers that the scientific knowledge currently available is sufficient to immediately launch an ambitious and rebuilding-oriented MSE for Northeast Atlantic mackerel. The 2025 benchmark results, recent ICES advice, work presented within PelAC, and developments in the FEISA framework now provide a solid foundation for initiating this process [1][2][3][4].

The PelAC believes this MSE must simultaneously pursue:

- The ability for a depleted stock to rebuild/recover.
- Ensuring a healthy stock biomass and the long-term sustainability of fishing activities.
- Ensuring healthy marine food webs through the progressive integration of ecosystem considerations into decision-making.
- Ensuring stocks and fisheries are resilient to a changing environment.
- Robustness to key biological, environmental, and governance uncertainties/challenges.

Such an approach would offer the best guarantee of developing a credible, robust, and widely accepted management strategy by all stakeholders.





Part 2: Performance expectations for the Future Management Procedure

Purpose of the MSE

The PelAC considers that the principal objective of the future Management Strategy Evaluation (MSE) should be to identify management procedures capable of delivering agreed biological, ecological and socio-economic outcomes under a broad range of plausible future conditions.

Instead, the PelAC wishes to propose the management objectives, the performance expectations and the range of uncertainties against which alternative management procedures should be evaluated. Stakeholders should then be involved in dialogue with managers and scientists through continued consultation with the EU and through ICES processes, such as a Mackerel MSE Working Group, on the types of harvest control rules being developed and tested within the MSE.

The purpose of the MSE should therefore be to provide managers with a transparent comparison of alternative management procedures, allowing explicit evaluation of the trade-offs between rebuilding performance, sustainable exploitation, ecosystem resilience and fishery stability.

Management Procedures to be evaluated

The PelAC considers that the MSE should evaluate a sufficiently broad range of management procedures rather than focusing on a single candidate strategy.

Consistent with previous ICES MSE requests, alternative management procedures should explore different combinations of management elements, including where appropriate:

- alternative biomass trigger levels used within the management procedure;
- alternative target fishing mortality values;
- alternative harvest control rule structures;
- different mechanisms for limiting interannual TAC variability;
- implementation uncertainty, including situations where realised catches differ from agreed TACs;
- alternative assumptions regarding stock assessment performance where relevant.

The objective should not be to identify the "best" harvest control rule in advance, but to understand how different management approaches perform under contrasting biological and management conditions.

Performance Criteria and Indicators

Alternative management procedures should be evaluated using a common and transparent set of performance indicators over short-, medium- and long-term time horizons.

a. Recovery performance

Given the current biological status of Northeast Atlantic mackerel, stock recovery should remain the highest priority of the future management strategy.

The selected management procedure should demonstrate its capacity to:





- rebuild the spawning stock biomass above *Blim* within an acceptable short timeframe;
- maintain a high probability that the stock remains above *BMSY* over the long term;
- minimise the probability of the stock falling below *Blim*;
- promote a resilient population structure capable of supporting sustainable exploitation.

Beyond simply assessing whether rebuilding occurs, the evaluation should explicitly quantify the expected rebuilding time under each management procedure and the degree of confidence associated with this outcome.

b. Fishery Performance

The future management procedure should also support economically viable fisheries while remaining fully consistent with precautionary management objectives.

Candidate management procedures should therefore be evaluated according to their ability to:

- provide sustainable long-term catches;
- maximize long term yield where compatible with rebuilding objectives;
- maintain stable and predictable fishing opportunities;
- minimise unnecessary interannual variability in TAC;
- balance biological recovery with socio-economic stability in a transparent and precautionary manner.

The PelAC recognises that trade-offs between conservation objectives and catch stability and long-term yield are unavoidable. The MSE should therefore explicitly quantify these trade-offs rather than attempting to optimise a single performance metric.

c. Population Resilience

The PelAC believes that the long-term resilience of the stock cannot be assessed solely through spawning biomass.

Additional indicators should therefore be considered where scientifically feasible, including:

- age structure of the spawning population;
- age composition of catches;
- maturity-at-age;
- recruitment variability;
- indicators reflecting the capacity of the stock to recover from periods of poor recruitment.

These indicators would provide complementary information on the robustness of alternative management procedures and their capacity to maintain a productive stock over time.

d. Ecosystem performance

The PelAC supports the progressive integration of ecosystem considerations into fisheries management, consistent with the ICES Framework for Ecosystem-Informed Science and Advice (FEISA).

Where scientifically feasible, management procedures should therefore also be evaluated using indicators reflecting the ecological role of mackerel within the Northeast Atlantic ecosystem.





This could include, where appropriate:

- ecosystem resilience,
- predator-prey interactions,
- bycatch and mixed-fishery interactions,
- alternative assumptions regarding natural mortality, including explicit separation of background mortality and predation mortality where scientifically justified and stock demographic structure.

The PelAC recognises that ecosystem-informed management is an evolving field and encourages a pragmatic and incremental approach that builds upon existing scientific knowledge.

e. Use and presentation of Performance Indicators

The PelAC does not consider it necessary to prescribe an exhaustive list of performance statistics, which should be defined by ICES on the basis of the criteria set out above. The PelAC considers, however, that the way indicators are selected and presented is as important as the indicators themselves, and expects that:

- each performance criterion set out in (a) to (d) is associated with at least one quantified performance statistic, so that no stated objective remains unevaluated;
- indicators are reported over short-, medium- and long-term horizons and as full distributions (medians and percentiles) rather than point estimates, so that the confidence associated with each outcome is explicit;
- biological, fishery and ecosystem indicators are presented on a comparable basis, so that the trade-offs referred to in section 4 can be read directly from the results;
- the number of indicators remains limited and understandable to non-specialists, in the interest of the transparency and acceptability of the future strategy;
- where an indicator is not yet scientifically operational, this is stated explicitly rather than the corresponding criterion being set aside.

Alternative management procedures should be compared using a common set of transparent and appropriate performance indicators. We have outlined how the high-level Objectives (see above) could be operationalised by suggesting key "performance criteria" for each objective and appropriate performance indicators (See table below)

Objective Type	High Level Objective <i>These are broad, overarching goals that guide fisheries management</i>	Operational Objective/ Performance Criteria <i>These are specific, measurable outcomes needed to achieve high-level objectives</i>	Indicators <i>Indicator used to describe status - mainly used for monitoring but may be actionable by managers.</i>
1 Biological-Fishery	A) Recover stock above <i>Blim</i> in the short-term.	Restore biomass above <i>Blim</i> with a greater than X% probability within the short-term [year].	SSB relative to <i>Blim</i> Time (years) to <i>Blim</i> and confidence/probability [%]





	B) Prevent overfishing and ensure the stock rebuilds and is maintained at levels capable of producing the maximum sustainable yield in the medium to long-term.	Control fishing pressure $\leq F_{MSY}$ and rebuild/maintain Biomass above $MSYBtrigger$ [or $BMSY$ target] in the medium and long-term with a high [X%] probability.	Time (years) to $MSYBtrigger$ and confidence/probability [%] $F \leq F_{MSY}$ and $SSB \geq MSYBtrigger$ [or $BMSY$].
2 Biological-Safety	Keep the stock within safe biological limits. Ensure the stock is managed according to the ICES precautionary approach. Minimise probability of the stock falling below <i>Blim</i> .	Ensure a less than 5% probability of the SSB falling below <i>Blim</i> . Once recovered above $MSYBtrigger$ (see Objective 1A).	Probability $SSB \geq MSYBtrigger$ (/Bpa). Probability $SSB < Blim$
3 Socio-Economic	The selected strategy should maintain stable and predictable fishing opportunities, to the extent compatible with biological objectives (above).	Ensure catches do not vary on average [$>X\%$] per TAC setting period (year). [Ensure when stock is low a minimum F or TAC is taken.]	Average (median) long-term catch IAV in catch [TAC] F relative to F_{MSY} F relative to F_{min}
4 Ecological/Eco system	A) Ensure a healthy age structure of the stock. To provide complementary information on the stock's resilience and its ability to cope with future fluctuations in recruitment. B) Recover and maintain the ecological role of mackerel in the Northeast Atlantic ecosystem, including in the food web. This should be progressively considered in evaluating the performance of different management strategies. This approach aligns with the FEISA framework developed by ICES and discussions within PelAC on implementing more ecosystem-based management.		Age Based Index (ABI) (Kell et al. <i>In Press</i>) Average age in catch/population Average maturity-at-age in catch/population Recruitment variability Bforage (Kell et al. <i>In Press</i>) Predator-Prey interactions – assumptions regarding natural mortality (separation of background vs predation mortality).





Resilience to Changing Environment and Robustness to key Uncertainties.	A) Ensure stocks and fisheries are resilient to a changing environment.	Robustness Tests	Robustness tests
	B) Ensure LTMS robustness to key biological, environmental, and governance uncertainties/ challenges.		

Trade-off Analysis

The PelAC considers that one of the most valuable outcomes of the MSE should be a transparent evaluation of the trade-offs associated with alternative management procedures. Rather than identifying a single "optimal" management strategy, the evaluation should clearly demonstrate how different management procedures influence:

- rebuilding speed;
- long-term biomass;
- sustainable catches;
- interannual catch variability;
- population resilience and ecosystem performance (see above);
- resilience to biological and environmental uncertainty.

This would allow managers to make informed policy choices based on transparent scientific evidence while fully understanding the consequences associated with different management objectives.

Robustness requirements testing

One of the principal strengths of an MSE is its ability to identify management procedures that continue to perform satisfactorily despite uncertainty.

The PelAC therefore expects candidate management procedures to be tested against a sufficiently broad range of plausible future conditions.

This robustness tests should include, where appropriate:

- prolonged periods of poor recruitment;
- alternative stock-recruitment relationships;
- uncertainty regarding natural mortality;
- changing environmental and climatic conditions;
- uncertainty in stock assessment inputs and observations;
- changes in stock productivity or spatial distribution;
- scenarios where realised catches repeatedly exceed scientific advice.

The PelAC does not seek to prescribe the technical modelling methods used to assess these scenarios, but considers that stakeholders should remain involved through consultation on the choice of





scenarios and assumptions, and that the selected management procedure should demonstrate satisfactory performance across a realistic range of uncertainties.

Exceptional Circumstances

The PelAC considers it is important to distinguish between uncertainty that should routinely be addressed through robustness testing and genuinely exceptional circumstances requiring management review.

Exceptional circumstances may include, for example:

- prolonged recruitment collapse;
- substantial and persistent changes in stock productivity;
- major shifts in stock distribution;
- loss of key scientific information required for management;
- persistent divergence between observed stock dynamics and model projections.

The occurrence of such circumstances should trigger a structured review of the management procedure and, where appropriate, the initiative a new MSE rather than ad hoc modifications to management measures.

Summary of PelAC Expectations

Management procedure component	PelAC expectation
Management objectives	Recover the stock, maintain sustainable fisheries, promote ecosystem resilience and provide stable fishing opportunities.
Performance criteria	High probability of maintaining biomass above <i>BMSY</i> , minimal risk of falling below <i>Blim</i> , rapid rebuilding, sustainable catches predictable TACs, healthy population age-structure and ecosystem (e.g. predator provisioning).
Performance indicators	Biological, fishery and ecosystem indicators allowing transparent comparison of candidate management procedures.
Robustness testing	Demonstrated performance under uncertainty relating to recruitment, natural mortality, climate change, observation error and repeated catch exceedance.
Transparency	Simple, understandable and periodically reviewable management procedures developed with stakeholder participation.
Exceptional circumstances	Clearly defined situations triggering review of the management procedure rather than routine robustness testing.





Conclusion

The PelAC considers that the success of the future MSE will depend on selecting a management procedure capable of consistently delivering agreed biological, ecological and socio-economic outcomes under a broad range of future conditions.

The PelAC therefore encourages ICES to evaluate alternative management procedures against transparent performance criteria, allowing managers and stakeholders to identify the approach that provides the most robust balance between stock recovery, sustainable exploitation, ecosystem resilience and long-term stability for the fishing sector.

The PelAC stands ready to support the European Commission throughout the development of the future LTMS and MSE. Beyond the high-level recommendations presented in this advice, the PelAC has developed a more comprehensive set of technical proposals covering management objectives, performance expectations, robustness requirements, ecosystem considerations, performance indicators, operating model assumptions and exceptional circumstances. Should the European Commission consider it useful, the PelAC would be pleased to provide and discuss these elements in greater detail at the appropriate stage of the process.

References

- [1] ICES. 2025. Benchmark Workshop on Northeast Atlantic Mackerel (WKBMACNSSH 2025). Copenhagen, Denmark.
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- [4] ICES. 2025. Framework for Ecosystem-Informed Science and Advice (FEISA). ICES Cooperative Research Report.
- [5] PELAC WORKSHOP REPORT Furthering the implementation of EBFM through MSE: https://www.pelagic-ac.org/wp-content/uploads/2025/12/PelAC-MSE-Workshop-report_10.02.2026_final.pdf

