



Building Resilient Pelagic Fisheries in the Marine SABRES Arctic Northeast Atlantic Demonstration Area

The Marine SABRES project has made significant progress in understanding the dynamics of the Northeast Atlantic pelagic fisheries through collaborative stakeholder engagement and model development. Pressing challenges such as shifting pelagic fish distribution, overfishing, and international governance gaps require integrated and adaptive solutions.

Marine SABRES advocates to strengthen adaptive management, fostering international cooperation and the integration of socio-economic and environmental factors into decision-making to build resilient and sustainable pelagic fisheries for the future.



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Context

Pelagic Fisheries in the Arctic Northeast Atlantic

The [Marine SABRES Arctic Northeast Atlantic Demonstration Area](#) hosts some of the world's most valuable pelagic fisheries for mackerel, herring, blue whiting, and capelin. These fisheries are vital to the economies in Iceland, the Faroe Islands, and Greenland. The fishing and processing of these species provides a significant source of employment in rural communities, and these species play a key role in global seafood supply. Varying stock distribution of these species has created major challenges for international governance of these fisheries, as stocks migrate across multiple Exclusive Economic Zones (EEZs). Disputes over quota allocations among coastal states have led to overfishing, highlighting the urgent need for collaborative and sustainable fisheries management solutions that address ecological pressures while fairly distributing economic benefits.

The profitability and industrialisation of these fisheries extend their economic impact well beyond local communities. Value generated flows through supply chains to processing and export companies, technology providers, and international corporate structures. Therefore, management solutions must consider this broad socio-economic footprint.

Current Challenges

1. Shifts in Fish Distribution

Migration patterns of pelagic stocks are often dynamic. These changes make traditional management strategies less effective and increase uncertainty for fishers and policymakers.

Marine SABRES - Marine Systems Approaches for Biodiversity Resilience and Ecosystem Sustainability - brings together 21 research partners to restore marine biodiversity and support a sustainable blue economy by increasing the uptake of ecosystem-based management in Europe.

The project will co-develop a simple Socio-Ecological System with stakeholders and test its functionality in three regions, or **Demonstration Areas (DAs)**, in Europe. Each region will explore a different management priority.

Our research in the **Arctic Northeast Atlantic DA** focuses on commercial pelagic fisheries in three countries - the **Faroe Islands, Iceland, and Greenland**.

Learn more about each Demonstration Area on the [Marine SABRES website](#).

2. Overfishing and Inadequate Quota Management

Overfishing remains a critical concern, with total catches often exceeding scientifically recommended limits. While some quota-sharing agreements exist, the lack of effective and comprehensive arrangements among coastal states - including Iceland, Greenland, the Faroe Islands, the UK, Norway, and the EU - continues to challenge sustainable fisheries management. In the absence of binding consensus, states often set unilateral quotas, which collectively exceed scientifically advised limits.

3. Challenges in International Policy Cooperation

The transboundary nature of pelagic fisheries complicates governance. While regional organizations like the North East Atlantic Fisheries Commission (NEAFC) and the International Council for the Exploration of the Sea (ICES) exist, their enforcement mechanisms are limited. They provide a multilateral platform but lack enforcement power. Disputes over quota allocations strain international relations and hinder the development of unified conservation efforts. Disagreement over quota distribution is not only technical but also historical and political, involving issues of zonal attachment, historical catch records, and institutional trust.

4. Economic and Social Dependencies

The economic well-being of communities in the Arctic Northeast Atlantic Demonstration Area is closely tied to pelagic fisheries. While the Greenlandic pelagic fleet primarily relies on Icelandic and Faroese infrastructure due to the absence of landing sites in East Greenland, processing industries, employment opportunities, and local economies depend on these resources. This interdependence underscores the importance of sustainable management to balance ecological and socio-economic needs.

Marine SABRES Stakeholders Engagement and Collaborative Tools

Stakeholder interviews and participatory workshops are enhancing the [Marine SABRES Simple Socio-ecological System](#) (Simple SES) framework to ensure it reflects real-world complexities and relevance. This participatory approach reinforces that the long-term sustainability of these vital fisheries depends on collaboration among policymakers, scientists, and industry stakeholders. Marine SABRES addresses some of these challenges through an inclusive, systems-based approach:

- **Targeted Interviews:** Engaged stakeholders, which includes fishers, policymakers, Indigenous and local communities, to gather diverse perspectives on how pelagic ecosystems and fisheries have changed.
- **Workshops and Feedback Loops:** Conducted workshops using tools like Mentimeter to refine the Simple SES framework and [Causal Loop Diagrams \(CLDs\)](#), which map the interconnected factors affecting fishery dynamics. Stakeholders ranked sustainability solutions and helped prioritize future scenarios.
- **Explorative Approach:** Iterative model refinement ensures tools remain flexible and grounded in real-world conditions, incorporating both ecological and socio-economic considerations.

Key Messages

- Pelagic fisheries are highly profitable but ecologically vulnerable. Their value extends far beyond fishing vessels to include processing, exports, and innovation sectors across multiple nations.
- Unilateral quota-setting is driving overfishing. The absence of enforceable, flexible, and cooperative quota agreements is undermining sustainable fisheries management. This has led to the loss of Marine Stewardship Council (MSC) certification in 2019.
- Climate change is influencing the distribution of transboundary and straddling stocks and likely affects stock productivity. However, its specific impact on pelagic stock distribution remains poorly understood.
- Coastal communities within the DA depend on these fisheries. Sustainable management is essential for economic security, employment, and social stability in coastal regions.

Stakeholder's Voices

"We are so proud of all of our fishing and it's a big part of our identity, but still we have basically no marine protected areas...that made me very angry."

"Reconstructing the quota system and implementing protected areas simultaneously [is important]. We want [fishers] to understand that they are the stewards of the sea - they are the ones who will be protecting it and they are the ones that benefit from us protecting it."

Policy Recommendations:

1. Adaptive Quota Management

- Explore option to implement adaptive quota allocation based on real-time data and scientific advice to mitigate risks from shifting stock distributions. This intervention was consistently prioritized in stakeholder exercises.
- Strengthen national and international mechanisms to incentivize short-term agreements and build trust among stakeholders, for example, quota sharing with built-in flexibility (e.g., swap, trade, lease, review periods). This should include agreements with non-EU partners such as UK/Russia.

2. Enhancing International Governance

- Develop binding quota-sharing agreements that include mechanisms for dispute resolution and enforcement, ensuring compliance with scientific recommendations.
- Enhance cross-national collaboration and science-policy integration.

3. Integration of Climate Data

- Invest in monitoring and research to better understand climate impacts on pelagic ecosystems including pelagic fish distribution to allow for the integration of relevant data and information for sustainable pelagic fisheries management.

4. Promoting Economic Resilience

- Support circular economy practices to maximize resource efficiency and minimize waste in the fishing sector, creating more 'win-win' solutions.
- Explore ways of using the fishing fleet as a means of collecting ecosystem data.
- Promote low-emission technologies (e.g., gear, fuel) and invest in green energy infrastructure (e.g., harbors, plants).
- Develop programmes to help fishing communities adapt to climate impacts, including diversification of income sources and educational initiatives – very important for longer-term buy-in and adaptive capacity building.

5. Restoring Eco-Labelling Credentials

- Take urgent steps to address overfishing and achieve sustainable quota agreements to regain certification from eco-labelling programmes like the Marine Stewardship Council. Eco-label restoration can improve market access, increase consumer trust, and incentivize better management practices across the sector.
- Ensure compliance with MSC standards by aligning catch limits with scientific advice and enhancing monitoring efforts to demonstrate sustainability.
- Encourage sustainability reporting and expansion of eco-labels and certifications for NEA pelagic fisheries.

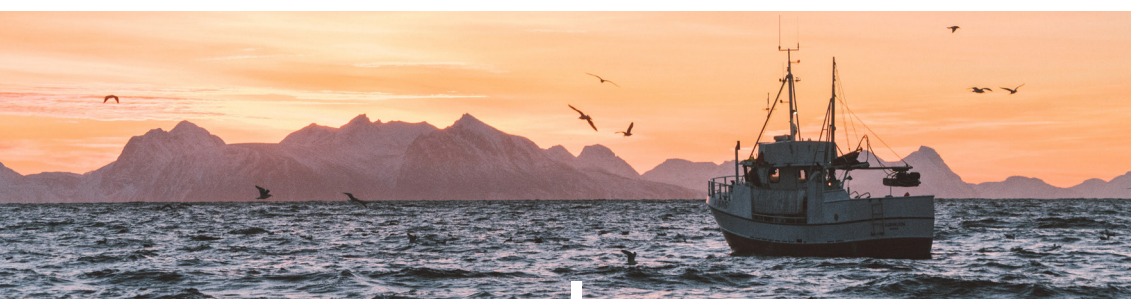
Academia and research stakeholders observed that stock assessments show herring and blue whiting are being fished at 120% of sustainable levels, and mackerel at 140%, though there is uncertainty about whether mackerel is actually overfished.

The primary cause cited for these figures is the absence of international agreements. This concern is reflected in stakeholder views...

“We might as well take less now and know what we have, rather than wait for the system to explode.”

Industry stakeholders echo this sentiment, emphasising...

“There is no doubt that we want an agreement despite the immediate reduction in catches that this would entail. It is very unfortunate that we are fishing so much above the advice. This is not our choice.”



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The resilience of pelagic fisheries in the Arctic Northeast Atlantic depends on cooperation across borders, sectors, and disciplines. Marine SABRES demonstrates that participatory, adaptive approaches rooted in both science and stakeholder experience can chart a path toward long-term sustainability.

By integrating socio-economic realities with ecological imperatives, policymakers can create a more balanced, resilient, and future-ready fisheries governance framework.

Marine SABRES deliverables can be accessed at the following links:

[CORDIS – EU research results](#)
[Marine SABRES results](#)
[Marine SABRES resources](#)

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