

# ADVISORY PLAN



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea

Conseil International pour  
l'Exploration de la Mer

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# ADVISORY PLAN

Delivering evidence-based advice to  
meet conservation, management,  
and sustainability goals

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# Advice to support ecosystem-based decision-making for our seas and oceans

ICES mission is to advance and share scientific understanding of marine ecosystems and the services they provide and to use this knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals. This advice supports ecosystem-based decision-making for the management of human activities in our seas and oceans, and contributes towards the effective application of an ecosystem approach. The approach seeks to maintain the health of marine ecosystems, alongside appropriate human use, for the benefit of current and future generations.

To support application of the ecosystem approach, we are committed to facilitating the

incorporation of a wider range of scientific knowledge into the evidence base that informs decision-makers and society about the state and trends of our seas and oceans, the consequences of human use, and options for conservation and management. The interconnected challenges encountered by managers of natural resources, species and habitat biodiversity targets while adapting to climate change are central to ICES.

We will answer requests on specific challenges encountered by policy developers and managers. We will also develop and regularly publish, update, and disseminate overviews on the state of ecosystems, fisheries, and aquaculture in the



## **STRENGTHENING ICES ADVISORY PROCESS**

### Ecosystem Overviews - Increasing our capacity to provide integrated ecosystem advice

The Ecosystem Overviews are central to ICES approach to support evidence-based ecosystem based management. They provide a description of the ecosystems,

ICES region, drawing as appropriate on analyses of human activities, pressures, and impacts. In the longer term, these overviews will incorporate social, cultural, and economic information.

Ongoing development of advice, tools, and assessments to support the ecosystem approach will build on our longstanding experience as impartial advisers on the status and use of marine ecosystems.

Development of these products will be informed by ICES ecosystem science, data provision, observation and exploration, and assessments of human activities that affect and are affected by marine ecosystems.

Requests for advice will be answered following ICES framework and guidelines for providing fisheries advice and the developing framework for ecosystem advice.

### **Key phrases illustrating the ecosystem approach**

- Management of human activities
- Consideration of collective pressures
- Achievement of good environmental status
- Sustainable use
- Optimization of benefits among diverse societal goals
- Regionalization
- Trade-offs
- Stewardship for future generations

identify the main human pressures, and explain how these affect key ecosystem components. The Ecosystem Overviews increase our capacity to provide the integrated ecosystem advice that is required to meet the current and future needs of requesters of advice and stakeholders.

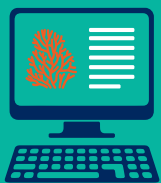
The overviews are evolving and expanding, and are currently available for nine ecoregions, including Oceanic Northeast Atlantic, an area beyond national jurisdiction (ABNJ). Other regions include Azores, Baltic Sea, Barents Sea, Bay of Biscay and the Iberian Coast, Celtic Seas, Greater North Sea, Icelandic Waters, and Norwegian Sea.

Evidence is required to explore the consequences of likely trade-offs between and within sectors as well as between sectors and conservation and protection obligations. This is to support sustainable development aimed at both human and ecosystem well-being and stewardship of marine ecosystems.

The overviews complement other types of advice, providing supporting context and allowing users to understand the implications of sectoral decisions in an ecosystem context. Fisheries are put into the context of other anthropogenic activities that impact marine biodiversity and the influence of climate change. They provide a concise and informative introduction to ecoregions and human activities considered in other ICES advice. Ecosystem Overviews identify

the main human pressures and environmental characteristics and provide a description of the state of the ecoregions. Fisheries Overviews summarize fishing activities in the ecoregions, describing the countries and fleets, the distribution and intensity of fishing activities, catches and bycatches. They also cover management of the fisheries, the status of fished stocks, wider fisheries impacts and advice on the trade-offs linked to mixed fisheries scenarios. Aquaculture Overviews will describe the distribution, ecosystem interactions, benefits, impacts and potential of aquaculture production at a regional scale.

The overviews also afford an opportunity to present information on “potential” and identify options for development where the ration of benefits to impacts is projected to be high.



#### **STRENGTHENING ICES ADVISORY PROCESS**

### **VME data portal – Supporting the Ecosystem Based Management**

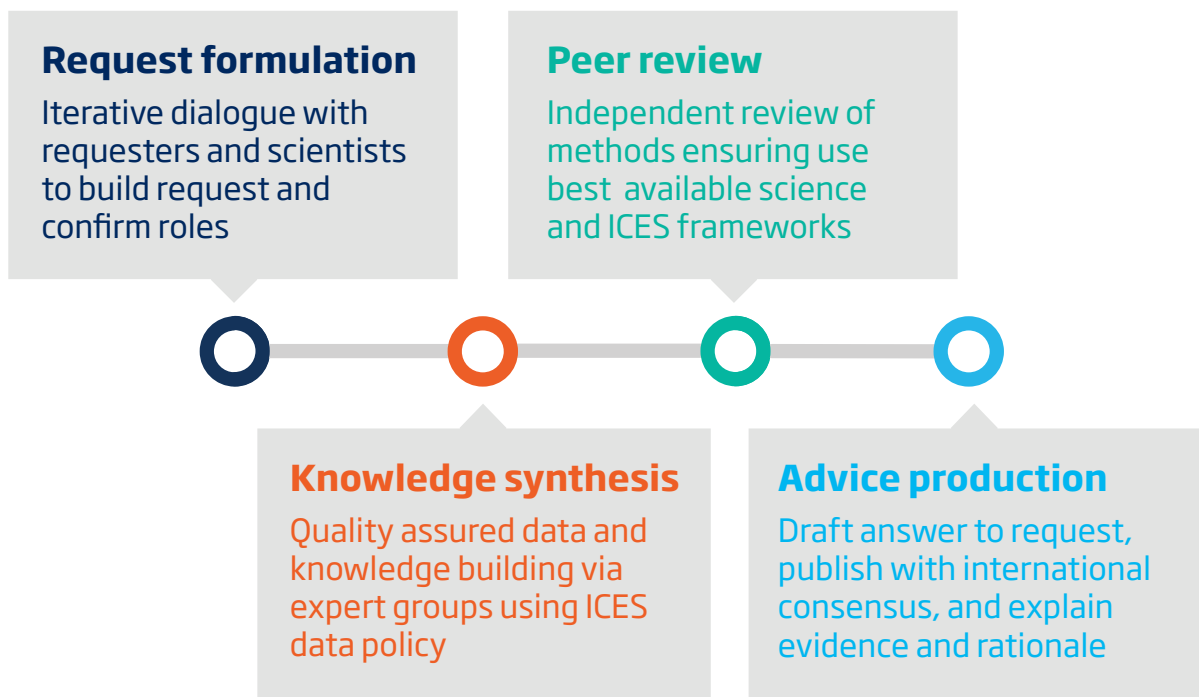
ICES hosts a central portal for data on the distribution and abundance of Vulnerable Marine Ecosystems (VMEs), and organisms considered to be indicators of VMEs, across the North Atlantic. The portal includes records of VME indicator organisms, recommendations for bottom fishing closures, which are used as the basis of the advice ICES provides, as well as the actual closures enacted by regional fisheries management organizations such as on Rockall and Hatton Banks. All this can be viewed on one map as different layers, making the process more transparent for our requesters and stakeholders.

# What we will do and how we work

ICES advice is independent and based on the best available knowledge. To remain relevant and credible, it should be developed and shared in a legitimate and transparent manner. We will continue to provide the evidence base for policy-developers and managers of marine activities in response to their needs for recurrent advice and special one-off requests. To embed

the provision of evidence in the context of ecosystem-based management, the advice will be framed within Fisheries, Aquaculture, and Ecosystem overviews. ICES Viewpoints will also provide valuable contributions to global discourse around the state of the marine ecosystem, the management of human impacts, and the provision of goods and services.

## Framework of ICES advisory process



## Credibility

The breadth of knowledge across over 150 expert groups, and the dynamism of our experts, is the foundation of ICES advice. Our experience as a trusted knowledge provider and facilitator of evidence for policy builds on this foundation. By ensuring robust debate and critical evaluation of data, methods, and knowledge sources, we will continue to provide credible best available science for decision-making for society. The dual tools of consensual deliberation of science and independent peer review of those deliberations are the key mechanisms to deliver our vision.

## Relevancy

We will continue our dialogue with requesters of advice and wider society to maintain the relevancy of our advice. The management objectives determined by society are already incorporated into the fisheries advice framework. We will work with partners to create a similar ecosystem advice framework which reflects international objectives, such as those of the UN Convention of Biological Diversity (CBD) and regional objectives such as the

Baltic Sea Action Plan, North-East Atlantic Environment Strategy, and the Marine Strategy Framework Directive. We will also use FAO guidance on the ecosystem-based fisheries management to link and where possible reconcile resource management and biodiversity conservation objectives.

## Legitimacy

Continuing adaption and improvement of our processes to reflect the expectations of the requesters of advice will maintain our legitimacy. Clear decision-making and appropriate quality assurance of the advisory processes will underpin our role as an independent and legitimate evidence provider. The potential for tensions may arise as the transparency and the interaction with stakeholders increase, in particular regarding the independence of the advice given. ICES will work with stakeholders, and social scientists, to ensure a wider range of relevant scientific knowledge is incorporated into our advice consistent with the ecosystem approach. ICES advice will be shared and communicated in an audience relevant manner.



### STRENGTHENING ICES ADVISORY PROCESS

Transparent Assessment Framework -  
Making data, methods, and results  
easy to find, explore, and re-run



TAF is an online open resource of ICES stock assessments for each assessment year. All data input, model codes, and output is fully traceable and versioned. The open framework enables users to easily find, reference, download, and run the assessment from any stage in the process leading to the published ICES advice for a given stock. TAF organizes data, methods, and results used in fish stock assessments, so that they are easy to reference and re-run with new data or methods.

# Priority

## ■ **Assuring quality**

Assure that quality encompasses the entire process from data collection to the publication of objective and independent advice.

## ■ **Incorporating innovation**

Incorporate new knowledge into the advisory process to contribute effectively to the creation of advice on meeting conservation, management, and sustainability goals.

## ■ **Highlighting benefits**

Highlight and communicate to existing and potential new users the relevance and benefits of ICES approach to providing advice.



# areas

## ■ **Sharing evidence**

Effectively share evidence and advice with requesters and society, and develop a responsive dialogue with partners to maintain relevance.

## ■ **Evolving advice**

Evolve the advice to remain relevant to policy developments and management challenges while horizon scanning likely future evidence needs.

## ■ **Identifying needs**

Identify and communicate the expertise, monitoring, data, and process needs to maintain and develop the provision of relevant advice.



## ■ Assuring quality

Assure that quality encompasses the entire process from data collection to the publication of objective and independent advice.

ICES will continue to build upon the proven track record of providing credible evidence-based advice through assuring quality, reproducibility, and transparency.

The existing quality control and assurance processes are enhanced to form an end-to-end quality assurance framework that will encompass best practice in data management, data integration, and translation into advice.

Quality assurance should meet international standards, adhere to the FAIR principles, and include independent peer review for all areas of advice.

To assure high quality advice, we will continue to maintain and expand the expertise needed to address evolving advisory needs.

### **Tasks:**

- As part of the quality assurance framework (QAF), map out process flows and critical control points and feedback loops in the advisory system and begin to address identified critical control points
- Seek international quality accreditation for ICES advisory system
- Develop a comprehensive quality management system for advice including implementing Regional Database and Estimation System (RDBES), TAF, etc
- Where possible ensure that all advice products are based on data that adhere to the FAIR principals
- Application and ongoing development of the benchmark system to ensure the advice is fit for the evolving advisory demands

## ■ Incorporating innovation

Incorporate new knowledge into the advisory process to contribute effectively to the creation of advice on meeting conservation, management and sustainability goals.

ICES advice is based on the best available knowledge, while also meeting our stringent requirements for transparency, traceability, documentation, peer-review, robustness, and being relevant to the needs of requesters and stakeholders.

Knowledge assimilated by ICES spans outputs delivered through our Science Plan, marine science internationally, data, tools and technologies for monitoring and assessment, as well as relevant social, cultural, economic and stakeholder information.

We will work with scientists, advisors, requesters of advice, and stakeholders and be guided by their feedback as we assimilate new and a wider range of relevant scientific knowledge, especially on natural resource management, biodiversity and climate change. The principal use of assimilated knowledge will be to advance our capacity to provide ecosystem-based advice.

### **Tasks:**

- Scan and evaluate new knowledge, from inside and outside ICES community, to assess if it can support state-of-the-art advice on meeting conservation, management, and sustainability goals
- Review and report on best practices in other agencies and management systems to inform future development of advice
- Support translation of mature science into Viewpoints or Ecosystem Overviews
- Engage stakeholders and advice recipients to develop current and future advice products
- Engage funding agencies to develop/recommend approaches to project calls and design that increase uptake of science into advice

## ■ Highlighting benefits

Highlight and communicate to existing and potential new users the relevance and benefits of ICES approach to providing advice.

ICES is a leading, trusted adviser on the impacts of human activities on marine ecosystems, advising on more than 90% of fisheries catches and the impacts of these associated fisheries on the marine ecosystem of the Northeast Atlantic. The advice draws on the expertise and experience of approximately 1,500 researchers across a multitude of disciplines in many regions.

Throughout its long history as an adviser, ICES has recognised the need to have credible, timely and relevant advice. The advice is based on the best available science and is characterized by quality assurance, developed in a transparent process, in an unbiased, independent manner. We will continue to develop advice products informed by our extensive network and underpinned by our experience as a trusted operator at the science for policy interface. We will profile our strengths in incorporating state-of-the-art scientific knowledge and adapting globally agreed standards to regional management challenges.

### Tasks:

- Prepare a communication strategy with our Science Committee (SCICOM) and the Secretariat outlining the strengths and future direction of ICES advisory system clarifying the message that we are an organization that operates as a science network with functional,

knowledge brokering and boundary organization activities

- Highlight the ecosystem approach in existing and future advisory products and communicate this to new audiences
- Communicate the synergy between ICES data, science, and advice by revising ICES website in terms of target audience, levels of detail and clarity, and link this to the visualization of advice on the website
- Raise the profile of ICES with marine sectors (commercial, managers and policy makers) not currently engaged with us such as energy and shipping
- Broaden participation in ICES science community by promoting involvement from academia in the advisory process
- Identify and target specific audiences of advice when concerns are expressed about the advisory process and begin dialogue to resolve such issues
- Expand the terms of references for annual meetings with requesters and observers to use them as part of the communication strategy



## ■ Sharing evidence

Effectively share evidence and advice with requesters and society, and develop a responsive dialogue with partners to maintain relevance.

ICES acknowledges that the audience for its advisory products goes beyond the requesters and immediate stakeholders to broader society. ICES already embraces a range of mechanisms for communicating and will continue to use new evolving methods to communicate our advice. We will maintain a dialogue with key users to ensure that we remain responsive to their needs.

The methods used to create the advice must be transparent and explained with the advice. The complexity of the language used will be appropriate to the target audience. The flow from the underlying science research to the published advice will be explicitly described, together with the principles by which we deliver the advice and evidence.

### **Tasks:**

- Improve and ensure branding of all ICES advice products
- Design and develop a user friendly and dynamic web platform for ICES advice in dialogue with requesters
- Develop web-based advice that includes several levels/layers (incl. popular advice, forecast options, full advice) and also enables presentation of advice in an effective and consistent format
- Work with the fishing industry to develop a mechanism to bring commercially derived sample data into the RDBES
- Improve the mechanism for sharing alternative perceptions of the state of stocks and fisheries
- Simplify the opening advice lines, but connect to the underlying basis and data in an interactive way
- Ensure that ICES advisory highlights are made available to society in a user-friendly way
- Ensure corrections in advice and updates in the advisory products will be transparent and easily tracked by the requesters
- Improve the advice profile in ICES document archive, encourage the creation of an ICES online library for all documents

## ■ Evolving advice

Evolve the advice to remain relevant to policy developments and management challenges while horizon scanning likely future evidence needs.

The policy arena is continuously changing and ICES advice needs to evolve to stay fit for purpose and pre-empt future requirements for impartial evidence. We need to be resilient to these future policy and technology developments and ensure that the knowledge base is robust. We will actively engage with requesters to understand and meet their oncoming needs.

Our advisory system will adapt to incorporate further consideration of issues such as cross sectoral challenges, ecosystem thresholds, biodiversity, impact and adaption to climate change, acceptable risk, and competition for space.

Efforts with requesters will intensify to identify and clarify management objectives, future scenarios and potential trade-offs. Mechanisms will be developed to alert managers and stakeholders to changes in the marine ecosystem and human activities. We will strive to maintain clear narratives when answering complex requests.

### **Tasks:**

- Map with requesters their current and potential future policy initiatives and management objectives; document their potential impact on the provision of advice
- Develop an ecosystem advice framework
- Identify and develop new clients for ICES advice e.g. marine energy and spatial planning
- Develop a stronger base in scoping and stakeholder engagement
- Investigate mechanisms and examples of assuring independence of advice in systems with increasing stakeholder participation, and more consultations and iterations with requesters
- Identify associated data and information needs related to policy developments, the concept of risk and thresholds for ecosystem health

## ■ Identifying needs

Identify and communicate the expertise, monitoring, data, and process needs to maintain and develop the provision of relevant advice.

ICES receives data from providers, undertakes analysis, and provides evidence-based advice and services. To enhance the provision of advice, we need to ensure that the scientific community and advice requesters are aware of potential improvements, gaps, and emerging issues that should be addressed.

Successful building of capacity requires an informed development approach. We will evaluate skills and expertise shortages, and the provision and use of data and knowledge. This evaluation will assist the data collectors (e.g. research coordination groups), experts, funding agencies, and advice requesters in their provision of resources for the production of advice.

### **Tasks:**

- Conduct an objective stock assessment prioritization and data-gap analysis
- Collate a list of future research and data requirements from benchmarks, overviews and expert group reports in an existing database on an annual basis, across expert groups, steering groups, and SCICOM
- Continuously review training courses run by ICES with the potential to increase the programme for key areas
- Identify key under populated areas of expertise and clearly communicate the current needs in expert groups to institutes and conduct an independent review of the gaps in expertise related to the anticipated advisory needs
- Identify potential programme of funding and training in disciplines that are relevant to the institutes and engage funding agencies and requesters of advice to highlight research to meet future advice needs
- Once the database on surveys, RDBES and the inclusion in stock assessments is concluded, communicate with the institutes and regional data groups about gaps and modifications that will augment the surveys and monitoring utility
- Identify disciplines and institutions that could collaborate with ICES and improve and add context to ICES advice (e.g. socio-economics and marine planning)





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