

Advisory Plan (2009–2011)

“To advance the scientific capability to give advice on human activities affecting, and affected by, marine ecosystems”

ICES Mission
reaffirmed by
the Council in
October 2007



ICES

International Council for
the Exploration of the Sea

CIEM

Conseil International pour
l'Exploration de la Mer

Introduction

The current ICES Strategic Plan was adopted by the Council in October 2007. As stated in the Plan, the need for advice is the ultimate driving force behind ICES, and ICES needs effective arrangements to provide scientific advice. ICES Advisory Services is the realisation of this aspect of the ICES Strategic Plan. Its vision is:

Scientific advice that is relevant, responsive, sound and credible¹

ICES has a long history advising on issues related to human uses of marine ecosystems. While ICES is a pioneer in the provision of scientific advice, other organisations also perform this service today. However, ICES remains unique in three important ways:

- 1) Pillars of Science and Advice – ICES is built on equal pillars of science and advice, which makes both pillars stronger. Advice benefits from close contact between scientists that conduct research and scientists preparing advice. In fact, many ICES scientists do both. This situation facilitates the rapid transition of knowledge from research to applications in the form of advice. It also helps to focus research on the need to fulfil the ICES mission of advancing the scientific capability to give advice, because many researchers know these needs based on their own experiences as advisors.
- 2) Independence – As an independent organisation, ICES is solely responsible for the advice it gives. The objectivity and credibility of ICES advice benefits from its “arms length” relationship with policy makers and advice users.
- 3) Scope of Advice – The scope of advice provided by ICES is broad taking into account exploited and unexploited components of marine ecosystems. It is prepared in cooperation with national science institutes, other inter-governmental scientific organizations (IGOs), and academic institutions.

The ICES Strategic Plan is to be implemented through multi-year plans for the science, advisory and Secretariat programmes of ICES. The Plan’s goal for the advisory programme is to “Plan and implement a programme to deliver the advice decision makers need in partnership with member countries and client commissions.” This is the multi-year plan for ICES Advice Services. It is a three year plan (2009-2011), which is for a shorter period than the five year ICES Science Plan. Scientific research is a medium to long term investment in the capability to give advice in the future. Advice must be both grounded in today’s issues while also evolving in the medium term to meet new challenges and take advantage of opportunities arising from scientific advances.

This advice strategy is primarily written for the ICES community although advice users and stakeholders may also be interested in the strategy.

¹ The vision for advisory services is contained within the broader ICES vision for “An international scientific community that is relevant, responsive, sound, and credible, concerning marine ecosystems and their relation to humanity.”

The evolving setting of ICES Advisory Services

On 5 December 2008, the General Assembly of the United Nations adopted (by overwhelming majority) a comprehensive resolution (A/63/L.42) proclaiming the importance of ocean resources and marine ecosystems, and calling for international cooperation in research, capacity building, and science based conservation, management and sustainable use of the oceans.

This expanding agenda for the oceans requires advice that integrates fisheries, environmental and ecosystem considerations. In the modern world of almost instant communications, ICES advice is also expected to be more responsive than ever before. The evolving setting for ICES Advisory Services requires adherence to the following principles:

- integrated advice across industry sectors and components of ecosystems,
- a rapid transition of research to applications so that ICES can respond to more complex (i.e., scientifically challenging) requests for advice,
- quality assurance, transparency and political neutrality so that users and stakeholders have confidence in advice,
- two way communications with advice users so that there is a mutual understanding of the questions that are being asked and the questions that scientists can answer,
- two way communications between stakeholders and scientists so that both appreciate each other's perspectives, including stakeholders' knowledge,
- responses to requests for advice on virtually a continuous basis,
- collaboration with other scientific organisations that share ICES vision of advice that is relevant, responsive, sound and credible.

Description of ICES Advisory Services

The ICES Advisory Committee (ACOM), composed of one representative from each ICES member country, is empowered by the ICES Council to oversee and lead ICES Advisory Services. ACOM is the sole body of ICES authorized to give advice on behalf of the Council.

While ACOM is ultimately responsible and accountable for all advice, it is not generally the source of the scientific expertise upon which the advice depends. To the extent practicable, ICES advice is produced by a five step process illustrated by the figure below.



Where necessary, the process may be modified to address special requests for advice, and to account for human resource (i.e., scientists) constraints. However, quality assurance and ACOM adoption of advice is always maintained. There are also situations where there is a need for elaboration or clarification, or for other advisory services (such as peer review of the product of another entity). ACOM is also empowered to make arrangements to fulfil these needs.

Most of the human resources, sources of data, and other assets that are required to produce advice belong to member countries, not ICES. Therefore, the quantity, quality and scope of advice are ultimately a shared responsibility. The ability to implement science based management for fisheries and marine ecosystems depends on the health of scientific enterprises (i.e., scientists, ships, laboratories, data bases, research funding) within member countries.

Objectives and priority actions

The ICES advice strategy is designed to address six critical themes. Each theme is associated with a high level objective. The themes and high level objectives are:

THEMES	OBJECTIVES
1. DATA	Access to more and better data to fulfil advisory needs
2. HUMAN RESOURCES	A scientific community with enhanced capability to contribute to advice
3. INTEGRATION	Integrated advice based on advances in scientific knowledge and ecosystem considerations
4. USER NEEDS	Responsiveness to the evolving needs of advice users
5. CREDIBILITY	Advice that has earned and enjoys a high degree of credibility
6. PLANNING	Expectations for advice harmonised with human and fiscal resource constraints

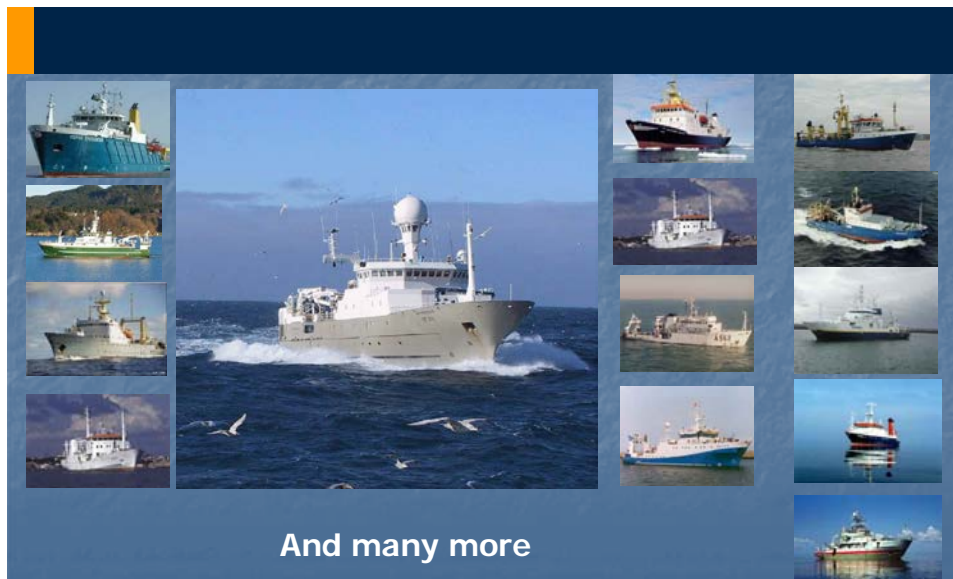
The goals and objectives of Advisory Services focus on accomplishments, but the key to a successful strategy is to identify priority activities that will actually result in the attainment of the objectives. Note that some activities contribute to the accomplishment of multiple objectives.

1. *Access to more and better data to fulfil advisory needs* – The ICES scientific community is fortunate to have access through member countries to a fleet of modern research vessels having the capability to conduct resource surveys and

collect a wide variety of oceanographic and ecosystem data. Many national surveys are coordinated by ICES. However, opportunities exist to more efficiently acquire and deliver valuable data on all aspects of marine ecosystems. In this regard, the needs for data to support both the ICES science and advisory programmes should be addressed in an integrated manner. The Marine Strategy Framework Directive also requires more and new types of data to assess marine ecosystem according to good environmental status indicators that are now being developed.

In addition to data collected by research vessels, a significant amount of ICES advice depends on fishery dependent data that quantifies catches and describes fishing activities. Fisheries data, including high spatial resolution data, is also needed to address conservation issues, such as the use of marine protected areas to protect habitat and biodiversity, and to reduce interactions with marine mammals and seabirds.

Research vessels contributing data to ICES advice



The value of data also depends standardization, quality assurance, ease of access and the ability to integrate multiple types of data as input to advice, and to promote the use of ICES data by the entire scientific community. Advisory Services needs to work with the ICES Data Centre to address this issue.

The following activities illustrate the strategy for this goal:

- 1.1. Work with the ICES Science Committee, ICES member countries, and agencies that fund data collection to continuously evolve toward a comprehensive plan for integrated monitoring of fisheries and ecosystem.
- 1.2. Continue to assist the European Commission and Member States with the design and implementation of the Data Collection Regulation. This regulation specifies the data that EC member states need to be collected and also provides funding for some of this activity.

- 1.3. Make arrangements to improve access to and use of high-resolution position data, including VMS data. These data are needed to evaluate area-based management proposals, define fishery units, and to refine measures of fishing effort.
 - 1.4. Fully implement and improve the InterCatch database. This is an ICES database for fisheries data used in stock assessments.
2. *A scientific community with enhanced capability to contribute to advice* – The ICES scientific community comprised of about 1600 scientists. The community has a unique culture of both conducting research and providing advice (as described in the Introduction) that is one of its strengths. However, the needs for advice are evolving and the ICES scientific community needs to expand accordingly. ICES needs new skills and scientists in disciplines that are presently underrepresented (e.g., climate change researchers, chemical oceanographers, genetics, data assimilation expertise, population viability modelers, and the social sciences). ICES also benefits by engaging scientists globally while maintaining its regional focus. Participating in pan-European programmes, such as the development of good environmental status indicators to help fulfil the Marine Strategy Framework Directive, also engages ICES with a broader community of scientists.

Many of the scientists with the skills and disciplines that ICES wants to attract are located in academic institutions, some of which have not had much contact with ICES. Attracting more scientists to ICES Advisory Services may also help address the heavy workload.

Another factor that will affect ICES future capabilities to give advice is investment in research by the ICES science programme. Advisory Services needs to effectively interact with the science programme to assure that priority needs for advice are addressed.

ICES also needs to be concerned about the succession of young and mid-career scientists into future leadership positions.

The following activities illustrate the strategy for this goal:

- 2.1. Work within the ICES Training Programme to strengthen the skills of the ICES scientific community relative to the needs for advice.
 - 2.2. Foster coordination and collaboration with governmental and non-governmental scientific organisations that have mutual interests with ICES Advisory Services and can contribute to the preparation of advice.
 - 2.3. Encourage academic scientists and scientists from disciplines underrepresented in ICES to participate in the preparation of ICES advice.
 - 2.4. Ensure that the ICES Annual Science Conference and Symposia reflect the interests and needs of scientists engaged in advice.
 - 2.5. Establish a list of priority research topics to advance the capability to provide advice.
3. *Integrated advice based on advances in scientific knowledge and ecosystem considerations* – Marine ecosystems are complex, interconnected, dynamic systems in which human activities, such as fishing and coastal development, have intended and unintended impacts. Until recently, many unintended impacts were either unknown or ignored, with many negative consequences. As a re-

sult, policy makers have called for an ecosystem approach based on sound science. The term “integrated advice” means advice that both takes (a) account of the impact of fisheries, other human activities, and natural change on marine ecosystems, and (b) full advantage of existing and emerging scientific research results. The following activities illustrate the strategy for this goal:

- 3.1. Use Benchmark Workshops to identify opportunities to (a) use recent and emerging scientific knowledge and methods in the preparation of advice, and (b) broaden such advice to encompass ecosystem issues.
 - 3.2. Develop a practical methodology to account for (a) climate change impacts on ecosystem dynamics, and (b) so-called ‘regime shifts’ on fishery management strategies and biological reference points. Protocols also need to be developed to effectively monitor the status, trends and effects of ecosystem changes.
 - 3.3. Assist in the preparation and implementation of practical environmental status indicators, in accordance with the EU Marine Strategy Framework Directive.
 - 3.4. Work with the ICES Science Committee and the wider scientific community to broaden and improve the suite of indicators available to managers and policy makers to assess the status of ecosystems.
4. ***Responsiveness to the evolving needs of users*** – Given policy agreements to pursue an ecosystem approach in providing advice, the needs of advice users are evolving rapidly. In fisheries, a management shift is underway from policies aimed at avoiding unacceptable outcomes to management to achieve desirable long term objectives (for example, shifting from limit reference points [e.g., F_{lim} ; B_{lim}] to target reference points [e.g., F_{msy} , B_{msy}]). New management tools are also being applied, such as multiyear management plans and spatial management (including coherent networks of Marine Protected Areas). Indirect impacts of human activities need to be assessed. There is also increasing recognition that decision makers need to consider and evaluate the social and economic consequences of their actions. To meet these evolving needs, ICES Advisory Services must be flexible and adaptive..

The following activities illustrate the strategy for this goal:

- 4.1. Serve the needs of advice users by drawing from a flexible portfolio of advisory services, such as advice, review services, technical assistance, science based positions on management issues, and interactive communication with managers.
- 4.2. Include provisions for non-recurring requests, fast track advice, and other forms of flexibility in MoUs with advice users (e.g., Commissions).
- 4.3. Collaborate with managers, stakeholders and other scientific organisations to prepare and implement a practical approach for developing and evaluating multi-annual fishery management plans. Such an approach should include the ability to apply management evaluation models during plan development rather than at the end of the process.
- 4.4. Review biological reference points, application of the precautionary approach, and the form of ICES advice on fisheries to better match user needs and policies.

- 4.5. Advance the scientific basis for ecosystem-based advice on fisheries and other human activities.
 - 4.6. Establish ongoing capability to respond to more frequent requests for comprehensive advice on area-based management.
 - 4.7. Evaluate options (for Council consideration) on how ICES can interface with consideration of social and economic aspects fisheries and other uses of marine ecosystems.
 - 4.8. Collaborate with SCICOM and the steering committee of the 2011 Symposium on Hydrobiological Variability in the ICES area 2000–2009, to produce a comprehensive ICES report on the status and trends of fisheries and marine ecosystems. The frequency of future status and trends reports will be determined based on experience gain in preparing this report.
5. *Advice that has earned and enjoys a high degree of credibility* – ICES needs to assure that its advice is based on high quality scientific data and analyses, and that the advice is developed in a transparent and open manner so that users and stakeholders have confidence in ICES recommendations. ICES adopted a quality assurance policy in 2005, and this needs to be fully implemented. The policy identifies the importance of peer review. ICES also adopted a policy allowing observers access to most elements of advisory processes, and they need to be made to feel welcome in accordance with the policy. Advisory Services needs to interact with advice users and stakeholders to help them better understand the ICES advice and also to understand their concerns (including criticism).

The following activities illustrate the strategy for this goal:

- 5.1. Implement and improve quality assurance protocols.
 - 5.2. Continue and where necessary improve peer review of the scientific input to advice.
 - 5.3. Conduct Benchmark Workshops of the assessment data, analyses, and models used in developing the scientific basis for fisheries advice. These workshops will also examine databases and data quality and allow for integration of new data sources, including those from fishery stakeholders.
 - 5.4. Continually improve the format of advice documents so that it is clearer and easier for advice users and stakeholders to understand.
 - 5.5. Make web based access to ICES advice more user friendly.
 - 5.6. Improve two way communications with advice users and stakeholders.
 - 5.7. Welcome advice users and stakeholders to ICES advisory processes and seek ways to increase their input.
 - 5.8. Conduct biennial customer and stakeholder satisfaction surveys.
 - 5.9. Conduct a comprehensive review of the performance of ICES Advisory Services with independent reviewers during 2011.
6. *Expectations for advice harmonised with human resource and fiscal constraints*- The demand for advice from ICES Advisory Services is outpacing the human and fiscal resources available to prepare advice. This demand is evi-

dence of ICES success as an advisory service, but it also poses a threat. ICES depends on scientists from member countries who have many other duties and professional responsibilities, and there is presently serious concern regarding the workload on the scientist generating the advice. The workload of the ACOM leadership (Chair and Vice Chairs) and the ICES Secretariat is very heavy, and in some cases, unsustainable. New approaches are required to plan and schedule work so that it is consonant with the available human and fiscal resources. In some cases, redistribution of the workload may help.

ICES Advisory Services is being subsidised by the ICES Strategic Investment Fund during a transition period from 2008–2010. In the long term, there must either be cost reductions or additional funding.

The following activities illustrate the strategy for this goal:

- 6.1. Renew MoUs with Commissions to provide financial support for ICES advice, and to harmonise expectations.
- 6.2. Seek and consider feedback from the scientists involved in the production of advice (members of Expert Groups, Review Groups, and Advice Drafting Groups) with a view toward improving advisory processes.
- 6.3. Prepare an annual work plan in cooperation with human resource managers, other advice providers and advice users.
- 6.4. Provide the Council with options to address the funding needs of Advisory Services following the 2008–2010 transition period.
- 6.5. Invest projected surplus funds generated by special requests into support for Advisory Services.
- 6.6. Identify areas where efficiencies can be achieved from the start of the process, intake of requests for advice, to the release of the advice by ACOM

Products, Outcomes and Performance

The most important products of Advisory Services will continue to be advice on fish stocks, environmental conditions, and ecological issues, and responses to related special requests. The ICES advice fills hundreds of printed pages annually. In addition, the activities described above will contribute many tangible products, such as:

- 1) Comprehensive planning for integrated monitoring of fisheries and ecosystems
- 2) Better data collected under the EC Data Collection Regulation
- 3) Full implementation of the InterCatch Database
- 4) ASC Theme Sessions and Symposia relevant to advice
- 5) A list of research priorities for consideration by the ICES Science Programme.
- 6) Reports of Benchmark Workshops with protocols for future stock assessments
- 7) “Good environmental status” indicators to meet the requirements of the MSFD
- 8) Updated MoUs with Commissions that govern the relationship between ICES and advice users.

- 9) More comprehensive reports on the status and trends of fisheries and ecosystems.
- 10) Annual work plans for ICES Advisory Services will deliver.
- 11) Results of customer satisfaction surveys
- 12) Results of comprehensive performance reviews of Advisory Services.

While tangible products are easy to enumerate, the most important results of the strategy are positive outcomes that are usually intangible, or not entirely attributable to ICES Advisory Services. The highest level positive outcome will be an increase in societal well being as a result of better policies and management decisions concerning the oceans and marine ecosystems.

Some examples of intermediate level outcomes that will result from the Strategy are:

- 1) Greater appreciation by stakeholders and managers of the criticality of scientific data, and justification for the large expenditures required to collect and manage these data.
- 2) A scientific community that is larger, more diverse, and thus more capable of providing high quality credible advice.
- 3) The ability for EU member states to fulfil the ambitions of the EU Marine Strategy Framework Directive.
- 4) Advice that is more realistic because it addresses the implications of climate change.
- 5) The evolution of fisheries management toward an ecosystem approach as a result of advice that addresses ecosystem issues.
- 6) Better fishery management plans that benefit from managers, scientists and stakeholders working together to develop plans.
- 7) Availability of comprehensive scientific advice on area-based management from a single entity that coordinates and consolidates information from throughout ICES.
- 8) Policy makers, stakeholders and the public objectively informed about the status and trends of fisheries and ecosystems
- 9) Decision makers that benefit from the wise council that experienced scientists can provide when decision makers and managers communicate more effectively.
- 10) Stakeholders that are more receptive of advice because they understand how it was produced and they have learned to trust the scientists that produce it.
- 11) Scientists that are less stressed and less mistake prone, because their workload is more reasonable and predictable.
- 12) More fish stocks and ecosystems that are well managed.

While these outcomes are important, it is difficult to use them to monitor the performance of Advisory Services and the effectiveness of the strategy because they are intangible. Therefore, the performance measures and performance standards given in the table below will be used to evaluate the performance of Advisory Services.

PERFORMANCE MEASURE	STANDARD
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	(for Satisfactory Performance)
Annual work plans adopted	By 31 December of the previous year
Advice delivered according to the annual work plans	95% of advice delivered on time (according to the Plan)
Advisory Services spending according to budget	Cumulative budget deviation for 2008-2011 less than 5%
MoUs enter into force	By 30 June 2010
Report on status and trends of fisheries and ecosystems	Report issued by September 2010
Customer and stakeholder satisfaction	An increasing trend in customer and stakeholder satisfaction over the period 2008-2011 as indicated by surveys
Interactions with customers and stakeholders	Participate annually in at least 20 events with advice users and/or stakeholders
Comprehensive Performance Review by independent experts	Report in 2011 that concludes performance is satisfactory

The results of performance monitoring will be used to correct problems and adjust the strategy. ICES Advisory Services must be adaptive and continue to respond to the evolving needs for advice.