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Science for Sustainable Seas

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ICES

International Council for
the Exploration of the Sea

CIEM

Conseil International pour
l'Exploration de la Mer

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Contents

Introduction.....	3
1 The Basis for ICES – The Convention and the Copenhagen Declaration.....	4
2 The ICES Organization.....	5
3 The Science and Policy Landscape in which ICES operates.....	6
4 ICES Vision and Mission	9
5 ICES Core Values.....	10
6 ICES Strategy – Pillars, Goals, and Activities	11
6.1 Building a Foundation of Science	12
6.2 Producing the information and advice decision makers need	13
6.3 Underpinning Science and Advice through Data and Information Services.....	15
6.4 Supporting the organization through the work of the Secretariat.....	16
7 Implementation and Review of ICES Strategy	18

Introduction

The ICES Strategic Plan (2014 – 2018) recognizes that the world is rapidly changing and that past successes and current strengths do not automatically translate into a bright future. Launching the ICES Strategic Plan (2014 – 2018) is an important accomplishment, but the process of self-examination, internal and external dialogue, and critical thinking about the future is the real benefit. In a changing marine science and policy landscape, society needs a strong scientific community that can support the sustainable management of the seas. As an organization, ICES is confident that it will continue to attract outstanding scientists to successfully accomplish the goals of its Strategic Plan.

ICES is a network of marine scientists, based on an international convention. The work of ICES is facilitated through this network of more than 4000 scientists, from over 350 marine institutes in 20 member countries and beyond (with ICES experts coming from 45 countries). The ICES network engages in frequent collaborations with industry stakeholders, and with various inter-governmental, and non-governmental organizations.

A key principle for ICES in developing scientific knowledge is addressing informational gaps and needs in a deliberate, well-planned manner to avoid duplication and add value to on-going processes. The important and unique features of ICES are its capability to cover the entire informational spectrum from monitoring and data provision to science and advice, and its ability to enhance capacity building through outreach and training programmes. These capabilities are supported by a formalized, yet highly responsive, organizational structure that ensures the objectivity and integrity of all work undertaken, and thus the apolitical nature of the knowledge, advice, and products developed and delivered by ICES.

ICES will continue to use its unique position as an independent marine science organization to formulate, coordinate, and conduct research on oceanic and regional ecosystems and fisheries, and to provide evidence-based knowledge and advice to support management decision-making.

The purpose of this Strategic Plan is to present the direction of ICES over the next five years in addressing a rapidly changing marine science and policy landscape. Implementation of this strategy will confront the challenges of protecting and restoring the health and productivity of the oceans for the benefit of present and future generations.

1 The Basis for ICES – The Convention and the Copenhagen Declaration

ICES was established in 1902 as an intergovernmental organization. The ICES Convention (1964) and the Copenhagen Declaration (2002), signed by the Contracting Parties (Member Countries of ICES), outline the fundamental purposes of ICES.

The ICES Convention states that the purpose of ICES is;

- To promote and encourage research and investigations for the study of the sea particularly those related to the living resources thereof;
- To draw up programmes required for this purpose and to organise, in agreement with the Contracting Parties, such research and investigation as may appear necessary;
- To publish or otherwise disseminate the results of research and investigations carried out under its auspices or to encourage the publication thereof.

In the Copenhagen Declaration, the Contracting Parties agreed to;

- Reaffirm their commitment to maintain ICES as a strong and independent scientific organisation in order to improve its capacity to give unbiased, sound, reliable, and credible scientific advice on human activities affecting and affected by, marine ecosystems;
- Endorse the ICES Strategic Plan as a basis for future ICES scientific and advisory work;
- Stress the need for ICES to develop and promote science-based knowledge of living marine resources and marine ecosystems
- Stress the need for ICES to strengthen working relationships with users of scientific information on living marine resources and marine ecosystems, including fishery management organisations and environmental commissions, and with stakeholders that are affected by or have an interest in, ICES work, thus requiring that ICES:
 - apply a quality assurance scheme for its advisory function;
 - adopt procedures to ensure the full consideration of data from a wide range of stakeholders;
 - be flexible and timely in providing scientific advice to meet the needs of decision-makers responsible for the stewardship of living marine resources and marine ecosystems without compromising the quality or reliability of the advice;
 - ensure that ecosystem considerations, including the effects of human activities and climatic and oceanographic conditions, are taken into account;
 - frame advice in relation to fisheries management, giving full consideration to the ecosystem context.

2 The ICES Organization

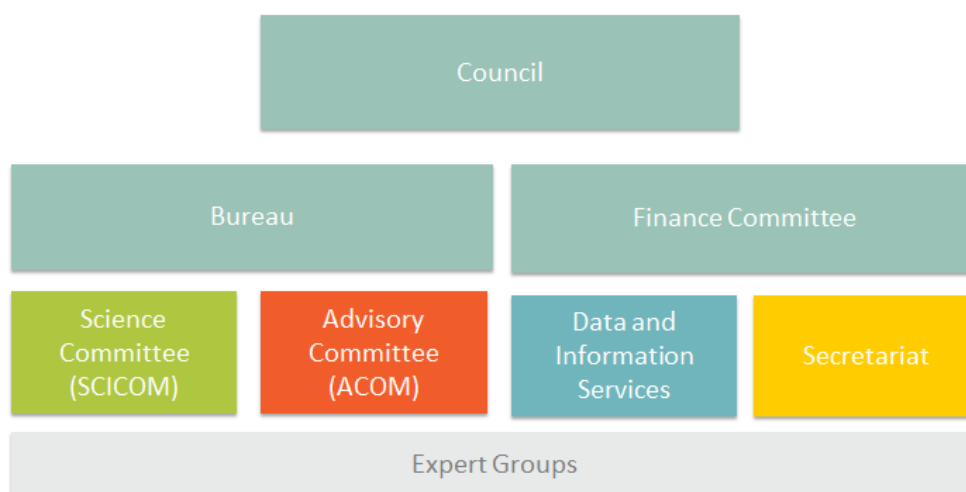
To organize its work, ICES has established a structure of committees supported by a Secretariat. This organizational structure ensures an efficient delivery of products and services, and facilitates the participation of a diversity of experts across a wide range of disciplines.

The ICES Council is the governing board, consisting of two representatives from each of the 20 member countries, meeting annually under the chairmanship of a President, elected for three years. The Bureau, an elected board of seven members chosen from the Council delegates, serves as the executive committee of the Council. Financial matters are overseen by the Finance Committee, meeting annually, to discuss fiscal issues and to review the audit report.

The Science and Advisory Committees (SCICOM and ACOM) are committees that the Council has delegated to advance the scientific and advisory work of ICES, respectively, including integration of joint activities where appropriate. To accomplish this work, SCICOM and ACOM manage supporting structures, which includes expert groups. Members of both Committees are national representatives nominated by member countries.

Data and Information Services delivers needed data, data services, and products that enable the science and advisory work to be successfully accomplished.

The Secretariat supports the ICES network, and provides strategic inputs, technical and administrative expertise, and assistance in the delivery of science, advice, and data products.



ICES Structure

3 The Science and Policy Landscape in which ICES operates

Note: The following section is still being edited and developed. Significant changes can be expected. Input and feedback welcome.

The marine science and policy landscape is diverse and dynamic, and is important in establishing and understanding the context in which ICES operates.

The policy landscape is framed by intergovernmental agreements and conventions at the global, regional, and national levels. These mandates include United Nations Conventions, Regional Seas Conventions, European Union legislation, as well as national legislation and policies.

During the last decade, the landscape has evolved from focusing on separate sectoral issues (such as living resources, energy, and transport) toward the inclusion of more integrated aspects that embrace entire ecosystems. This integration has focused on linkages across sectors and disciplines, and on identifying and evaluating the cumulative impacts of different human activities on marine ecosystems.

The ICES Strategic Plan takes cognizance of the changing policy landscape to ensure that ICES maintains and enhances its capability and relevance in providing scientific advice for marine management policies. Changes in the policy landscape also require marine science to more fully integrate the array of scientific disciplines to better understand marine ecosystems and how these systems are affected by human activity at various temporal and spatial scales.

Growing expectations are now being placed on oceans to provide food, resources, habitats and livelihoods; in response, policy makers increasingly recognize the need to address the multiplicity of human impacts on oceans and seas in integrated and coordinated ways.

ICES recognizes that its core expertise lies in understanding the limits of resilience of ocean systems against a background of multiple uses. These limits will change in response to many factors, including the increasing direct and indirect impacts of climate change on marine ecosystems in Arctic and sub-arctic seas. ICES acknowledges the need to respond to the evolution of policy and science needs with ambitious and innovative solutions.

(In the final version a web link or QR code will be available to the extended version of the living document “The Science and Policy Landscape in which ICES Operates”)



ICES operates in a complex and changing marine research and policy landscape. The diagram above lists some of the organizations and sectors ICES collaborates with. The roles are overlapping and examples listed not exhaustive.¹

Existing marine policy and legal instruments call for a strong science foundation to support their objectives and goals. To ensure that ICES work is relevant and responsive to the needs of society, ICES is committed to providing the required scientific knowledge, in collaboration with its strategic partners.

Although specific human activities may have particular effects on the marine environment, the study and management of the oceans and human activities requires an inclusive, inter-sectoral approach. Though different challenges confront different oceanic and regional sea areas, ICES possesses the expertise, experience, and creativity to address many of these challenges by developing robust, internationally-relevant standards and methodologies, which will enable comparison between eco-regions.

Through its 20 member countries, ICES focuses on the North Atlantic and adjacent European seas, as well the Arctic Ocean. The work of ICES is complemented by strategic partnerships in the North Pacific (with PICES) and in the Mediterranean Sea (with CIESM and GFCM). Well-established links to technology and innovation

¹ Figure Acronyms: Baltic Marine Environment Protection Commission (HELCOM), Convention for the Protection of the marine environment of the North-East Atlantic (OSPAR), Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), European Environment Agency (EEA), European Union (EU), Food and Agriculture Organization of the United Nations (FAO), General Fisheries Commission in the Mediterranean (GFCM), International Commission for the Conservation of Atlantic Tunas (ICCAT) International Council for the Exploration of the Sea (ICES), International Council for Science (ICSU), Intergovernmental Panel on Climate Change (IPCC), Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), Intergovernmental Oceanographic Commission (IOC), Northwest Atlantic Fisheries Organization (NAFO), North Atlantic Salmon Conservation Organization (NASCO), North Atlantic Marine Mammal Commission (NAMMCO), North East Atlantic Fisheries Commission (NEAFC), North Pacific Marine Science Organization (PICES), Scientific Committee on Oceanic Research (SCOR), Statistical Office of the European Communities (EUROSTAT), United Nations Development Program (UNDP), United Nations Environment Program (UNEP), World Wildlife Fund (WWF).

platforms, industry associations, and non-governmental organizations help to ensure that ICES remains relevant and responsive to clients, partners, and the general public. Interactions with clients, stakeholders, and partners are also important in identifying priorities for ICES.

4 ICES Vision and Mission

ICES Vision

To be a world leading scientific organization securing the sustainability of the seas.

ICES Mission

To advance the scientific understanding of marine ecosystems, provide information, knowledge, and advice on the sustainable management of human activities affecting, and affected by, marine ecosystems.

5 ICES Core Values

ICES recognizes a number of core values that underpin all activities of the organization. These guide the implementation of the strategy and inform the day to day operating principles of the organization.

- We value marine ecosystems, the sustainable use of their resources, and the protection of the natural environment in all our endeavours.
- Independence, integrity, and objectivity guide our science and advice.
- We work to the highest standards of quality.
- Through partnerships, we recognize and respect the work of others.
- We are responsive and sensitive to the needs of society.
- We value diversity in science.
- We are committed to openness and transparency in the way we work.

6 ICES Strategy – Pillars, Goals, and Activities

The ICES strategy is based on four pillars:

1. Building a Foundation of Science
2. Producing the information and advice decision makers need
3. Underpinning Science and Advice through Data and Information services
4. Supporting the organization through the work of the Secretariat

For each pillar, the ICES Strategic Plan includes one or more goals with associated activities. The list of activities is not exhaustive, and therefore some overlap exists between goals. The intention of the Plan is to illustrate the future direction of ICES without being prescriptive.

6.1 Building a Foundation of Science

The world's oceans play a crucial role in the functioning of the global environment. Marine ecosystems are driven by physical and chemical processes that influence the development of biological communities and exploitable resources. As humans are among the many species that play a part in this process, understanding the physical and biological functioning of marine ecosystems is fundamental to interpreting human dependence and influence on them.

Goal 1

Develop an integrated, multi- and interdisciplinary understanding of the structure and dynamics of marine ecosystems and their responses to change

Goal 2

Quantify the relationship between human society and marine ecosystems, estimate impacts and pressures, and develop science-based, sustainable pathways

Supporting Activities

ICES will take the lead in advancing the integrated scientific understanding of marine ecosystems and provide knowledge of human activities affecting, and affected by, marine ecosystems. ICES will achieve this by:

- investigating the structure, functioning, dynamics and interconnectedness of marine ecosystems, their different biotic components, and the abiotic environment at different spatial scales;
- providing tools and methods for assessing the relationships between marine ecosystems, their biological resources, and the provision of services to society;
- developing integrated ecosystem assessment methodologies and approaches that allow the use of both qualitative and quantitative data, and which can be used to address both specific advisory questions and broader ecosystem issues;
- establishing integrated ecosystem observation and monitoring systems that enable coordinated data collection in support of scientific and advisory needs, and which have strong links with the ICES and national data centres.

These and related activities will be implemented through the Science plan.

6.2 Producing the information and advice decision makers need

Scientific information is the foundation of ICES advice and this advice must meet the needs of decision makers. ICES is well established as an apolitical, evidence-based source of scientific advice on fishery management. The demand for this advice is increasing and ICES will continue to develop such advice. However, advisory needs go far beyond traditional assessments of the status of fish and fisheries. The development of integrated ecosystem assessments and advice must be nurtured and expanded.

ICES advice, both fisheries and environmental, depends critically on reliable evaluations of the effects of human activities, including fishing, on fish stocks and their environments.

ICES regularly provides advice regarding single fish stocks for which there is a fair basis of data from the fisheries and fishery independent surveys. ICES has also developed a framework of methodologies for providing advice on a large number of stocks that are “data poor”; that is, these stocks do not have long time series of reliable catch estimates, lack fishery independent surveys, or have insufficient information on the size/age compositions of the fishery catches. ICES also regularly provides advice on environmental issues, such as monitoring guidelines, Vulnerable Marine Ecosystems, Ecologically or Biologically Significant Marine Areas, bycatch, and Ecological Quality Objectives to name a few.

A major challenge is to further develop integrated advice for mixed fisheries in multispecies and ecosystem contexts. ICES is committed to make substantial contributions in transitioning, where appropriate, from single species to multispecies advice. ICES will develop integrated ecosystem assessments, provide regional ecosystem overviews, and identify and evaluate indicators for assessing ecosystem status and for the management of human activities. This will involve developing, testing, and implementing tools for assessing multiple impacts and cumulative effects on marine ecosystems, and developing models for evaluating management scenarios and options.

Goal 3

Evaluate and advise options for the sustainable use and protection of marine ecosystems, and their living resources

Supporting Activities

ICES will, based on relevant science, use its advisory process to produce evidence-based, relevant, responsive, and credible advice across industry sectors and components of ecosystems to address the needs of member countries and partner commissions. ICES will achieve this by:

- providing recurrent advice on fisheries and environmental issues in various areas of the North Atlantic and adjacent seas, such as the provision of advice on multi-annual fisheries management plans, spatial management needs, and societal consequences of alternative measures.
- responding to the evolving policy context and to special requests on fisheries, aquaculture, and environmental issues, such as the provision of precautionary and MSY-consistent advice, advice on mixed fisheries taking

account of biological interactions, advice on aquaculture–environmental interactions, and advice on implementation of environmental directives.

- promoting the use and delivery of integrated advice in an ecosystem-based approach to fisheries and environmental management, such as integrated ecosystem assessments providing guidance on how to maintain or improve good environmental status, and advice on ecosystem health and productivity that considers drivers such as climate change and various maritime activities.
- ensuring quality assurance, transparency, and political neutrality so that users and stakeholders have confidence in the advice. This will involve dialogue and collaborations with managers and stakeholders on both regional and international levels.

These and related activities will be implemented through the Advisory plan.

6.3 Underpinning Science and Advice through Data and Information Services

Marine observations are increasingly collected, coordinated, and assembled at a regional sea scale. It is, therefore, paramount that ICES has the capacity for dealing with, and developing, data services that deliver increasingly complex and interlinked data and processes in an effective and useful way to data users. ICES must ensure that it delivers appropriate dataset collections and services to fully address scientific questions and regional management goals.

ICES will maintain its leadership in marine data and information management by using best practices and by providing long term data stewardship and services for its advisory and science groups, as well as to the marine and maritime communities at large.

Goal 4

Promote the advancement of data and information services for science and advice needs

Goal 5

Catalyse best practices in marine data management, and promote the ICES data and information data node as a global resource

Supporting Activities

The ecosystem approach places a high demand on the complexity and amount of data and knowledge needed to enhance science, and to support informed, evidence-based management decisions. ICES will achieve this by:

- promoting the advancement of data and information services for science and advice needs on both regional and sub-regional levels, such as providing operational products for the Data Collection Framework/Multi-annual programme, and for the Marine Strategy Framework Directive.
- gearing up for new/expanding areas of dataset collections, such as new datasets for marine litter, noise, and the Arctic.
- ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and services to an expanded international user base, and to provide tools and knowledge to facilitate this use.

These and related activities will be implemented through the Data and Information plan.

6.4 Supporting the organization through the work of the Secretariat

The ICES Secretariat is important to ensuring an efficient, effective organization that adds value. The Secretariat is committed to facilitating and supporting the work conducted under the ICES Convention and Copenhagen Declaration by parties and stakeholders, using the highest standards of professionalism and objectivity.

Goal 6

Foster the science, advisory, data and information services through the work of the Secretariat

Goal 7

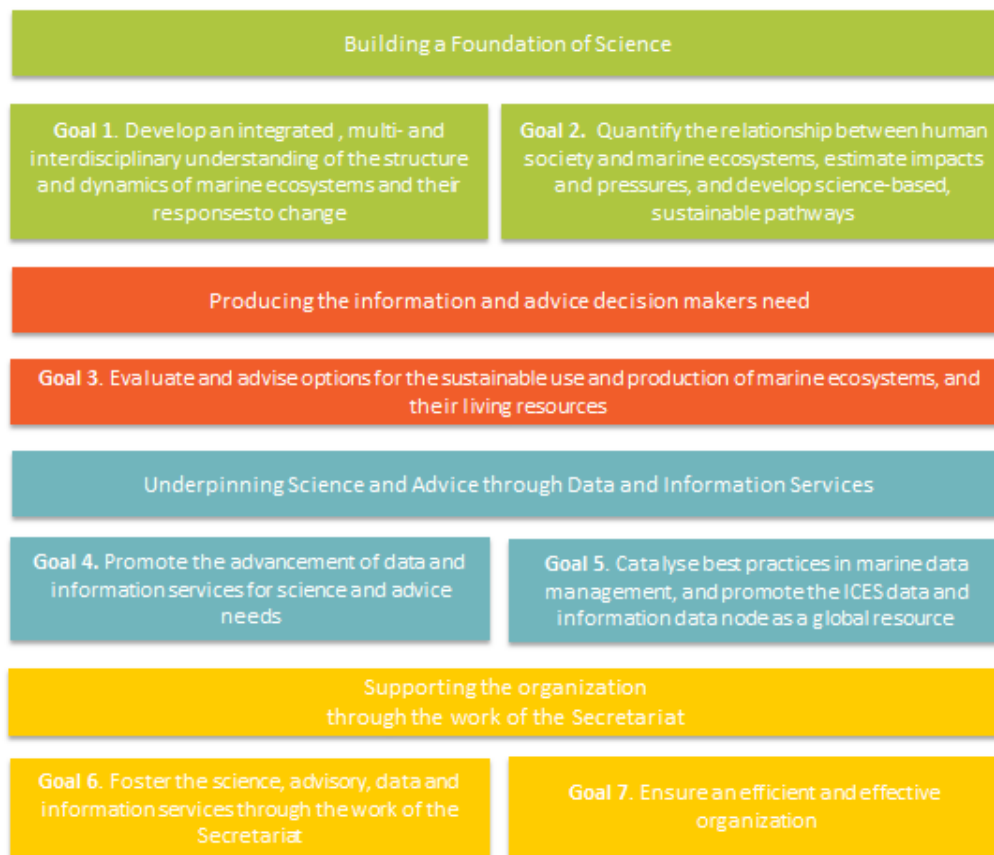
Ensure an efficient and effective organization

Supporting Activities

The Secretariat will provide professional management and support to the delivery of science, advisory, data processes and products. ICES will achieve this by:

- securing the needed resources for ICES Secretariat, science, advisory, data processes and services, and for publications and communications.
- implementing effective tools and efficient process flows to streamline work processes and enhance the delivery of products.
- organizing and supporting the resource planning and coordination of network activities.
- fostering cooperation and communication with member countries and partner organizations, stakeholders, and society.

These and related activities will be implemented through the Secretariat plan.



The ICES Strategic Plan, Four Pillars, and Seven Goals.

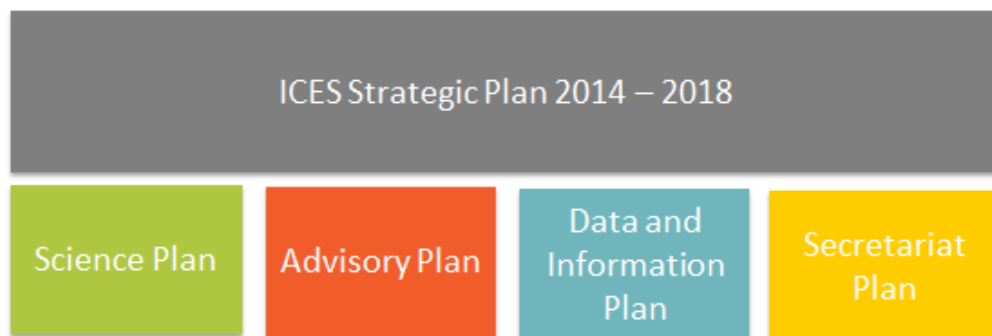
7 Implementation and Review of ICES Strategy

The publication of a strategic plan is only one milestone in an effective strategic planning process. The ICES Strategic Plan is a statement about the intentions of the organization; however, it is actions and accomplishments that really count. In today's rapidly changing world, a strategic plan needs to be a "living document."

The next steps in the ICES strategic planning process are;

STEP 1: Implementation of the ICES Strategic Plan

Science, Advice, Data and Information Services, and the Secretariat have prepared associated plans that will implement the ICES Strategic Plan. It is important to ensure synchronization and linkage between these associated plans in terms of both time and substance. The associated plans were prepared after reviewing the policy and research landscape in which ICES operates, evaluating current and future priorities for scientific advice, and considering present and planned scientific programmes in Member Countries. ICES will continue to cooperate with other international organizations and build strategic partnerships. A key aspect in formulating the associated plans was collaborating with Member Countries, clients, and international partners in the planning process.



The ICES Strategic Plan will be implemented through the four associated plans

STEP 2: Monitor Performance

A strategic plan is not complete unless it specifies ways to evaluate its success. Performance measures (things that can be measured and related to the degree of success in achieving goals) have been identified in each of the associated plans. Developing performance indicators and conducting peer reviews of ICES programmes on a regular basis will be critical to the success of the ICES strategy. The Council and Bureau have key roles in monitoring performance and evaluating Plan implementation. The Strategic Plan will be revised to adapt to changes in the marine science and policy landscape.

The ultimate measures of the success of this Strategic Plan will be if ICES has contributed in a meaningful way to restoring the health and productivity of the oceans for the benefit of present and future generations.