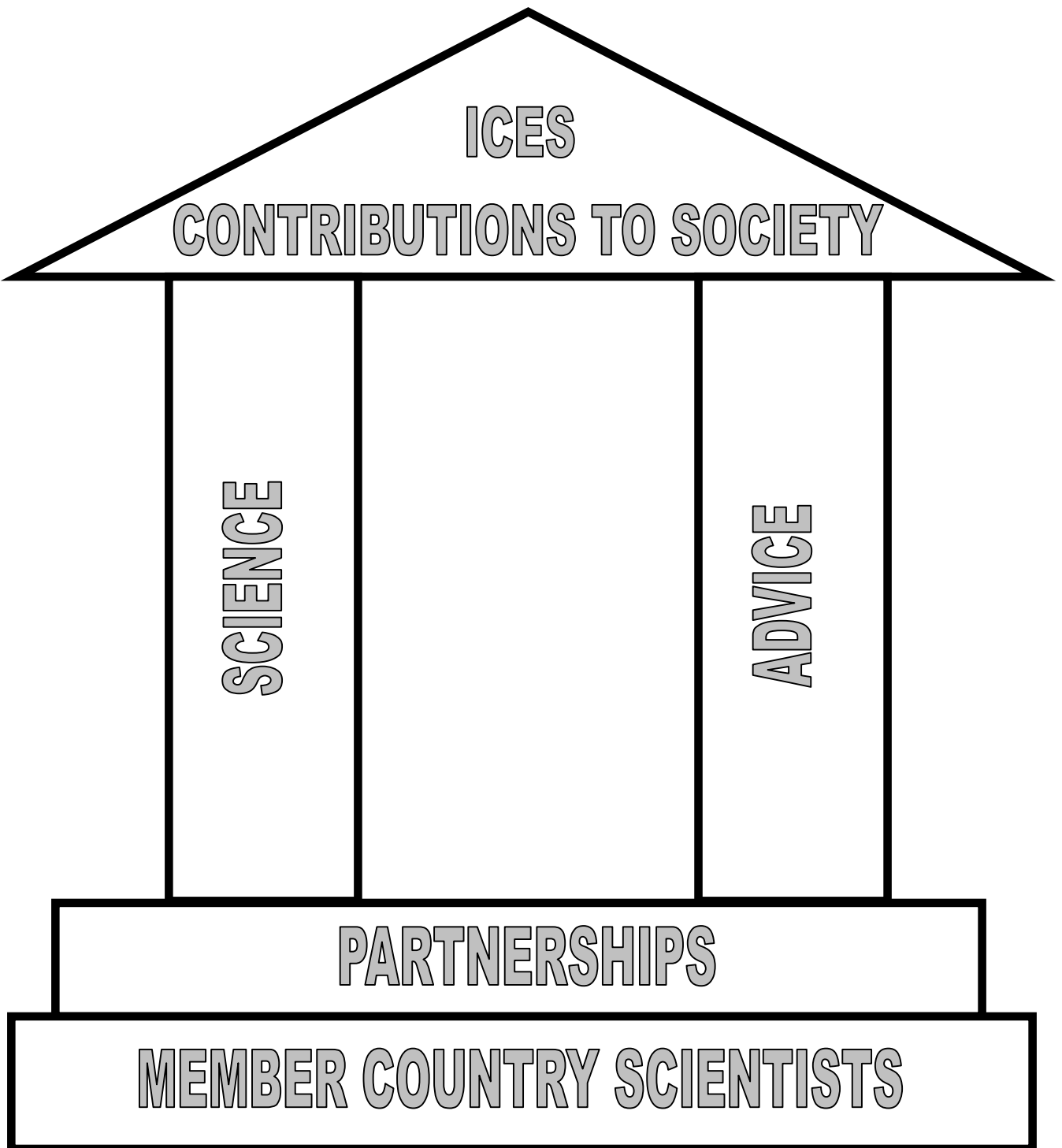


INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA



THE ICES STRATEGIC PLAN

Adopted by the national Delegates of ICES on 1 October 2001



The “added value” of ICES depends equally on the twin pillars of Science and Scientific Advice

This diagram is for illustrative purposes only.

A Vision worth sharing

An international scientific community that is relevant, responsive, sound, and credible, concerning marine ecosystems and their relation to humanity

The subject of the ICES Vision—marine ecosystems and their relation to humanity—is broad and complex, which reflects the evolution in societal needs for scientific information. However, it is not so broad as to include all marine science. The international scientific community envisaged is one that extends beyond ICES itself: it is a community made up of many scientists and scientific organisations linked by cooperative endeavour at the international level. It embodies the characteristics of a community that scientists are proud to be a part of and that users of scientific information want.

Introduction

The International Council for the Exploration of the Sea (ICES) was founded one hundred years ago. Since then, the world has changed enormously. We have learned a tremendous amount about marine ecosystems, and advances in technology promise to provide new perspectives on the oceans which were not imaginable when ICES was established. The societal context in which ICES functions has become more complex. Since ICES was founded, many other scientific organisations with overlapping or related interests have been established.

The rapid pace of change has motivated ICES to evaluate the kinds of challenges and opportunities it faces, and to consider future directions as the 21st century begins. ICES has reviewed its organisational structure in the light of changing circumstances and the need to foster interdisciplinary collaborative science. A plan to restructure the organisation was adopted in 1996. Beginning in 1998, ICES embarked upon a strategic planning process.

The strategic planning process has engaged a broad cross-section of the ICES community, as well as many interested parties that are not routine participants in ICES. Broad consultations were held with officials of Member Countries, potential scientific partners, fishery and environmental commissions which seek scientific advice from ICES, and stakeholders from the fishing industry and environmental community. This “ICES Strategic Plan” takes account of a wide range of constructive input received during the strategic planning process.

The Strategic Plan is divided into sections. The first section describes the Evolution of ICES from the beginning to the present-day position. A Mission statement is then provided which gives more detail on how the Vision (stated above) will be achieved. The Mission is followed by a Strategy with goals backed up by activities that illustrate ways to accomplish the Vision.

Evolution of ICES

The past and present

ICES was established in 1902 as an intergovernmental organisation. The ICES Convention outlines the fundamental purposes of ICES, which are:

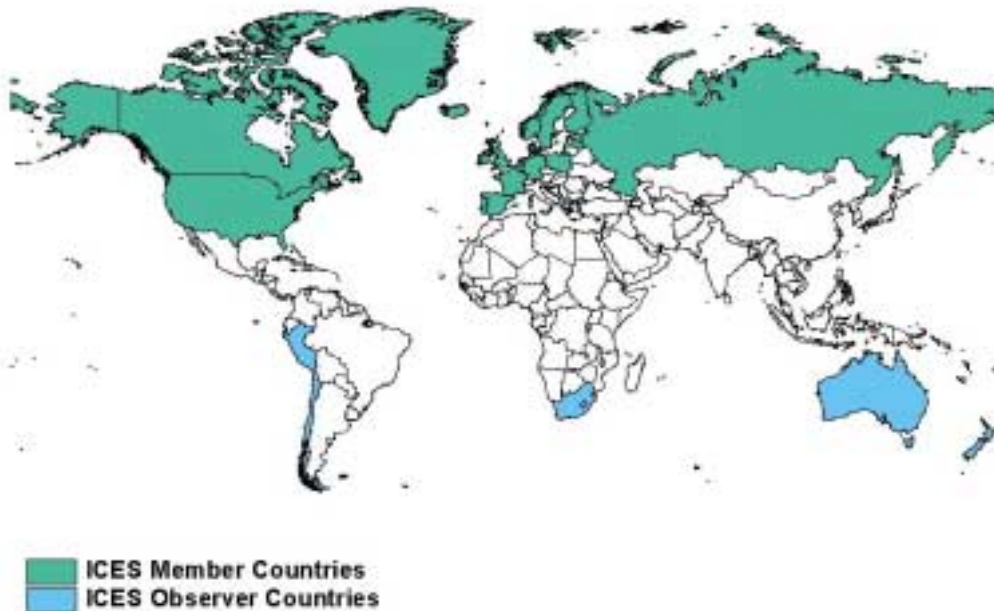
to promote and encourage research and investigations for the study of the sea particularly related to the living resources thereof;

to draw up programmes required for this purpose and to organise, in agreement with the Contracting Parties, such research and investigations 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.

Under the Convention, ICES is concerned with the Atlantic Ocean and adjacent seas, primarily the North Atlantic.

World map showing the location of ICES Member Countries and Observer Countries



The 19 ICES Member Countries are:

Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, the United Kingdom, and the United States.

For decades, ICES has led the way in the design and coordination of international marine research, and it has provided scientific advice. Its programmes have been carried out mainly at national expense. Throughout ICES' long history, its members have unselfishly supported the research programmes designed through ICES, because in reality, the members are ICES and the programmes of ICES are theirs. The past success of ICES has benefited very much from the ownership Member Countries feel for ICES and its programmes, which will also be critically important in the future. ICES has increasingly provided scientific advice based on its research programme. Today, ICES provides the scientific underpinning for most of the regulatory commissions concerned with fisheries and the environment in the Northeast Atlantic and the Baltic Sea.

ICES has grown from a small body of like-minded researchers to a complex organisation involving about 1600 scientists, with 19 Member Countries as well as several observer countries and non-governmental organisations. ICES fulfils its functions through an Annual Science Conference, about a dozen committees, close to 100 working and study groups, several symposia annually, and a wide range of publications. Its ultimate governing body is the Council, consisting of Delegates appointed by the Member Countries. The Bureau is the executive committee of the Council, which has been delegated broad authority. There is a Secretariat, which currently has about 35 full-time professional and support staff, located in Copenhagen.

It is the scientists who participate in ICES activities who generate ICES products. The main products are **scientific information** based on research conducted in the Member Countries and **scientific advice** containing information provided in a format that can be used by policy-makers.

- Responsibility for overseeing the production of **scientific information** rests with the **Consultative Committee** which coordinates and sets priorities for the work of the seven Science Committees (Oceanography, Marine Habitat, Living Marine Resources, Resource Management, Fisheries Technology, Mariculture, and the Baltic).

- Responsibility for overseeing the production of **scientific advice** rests with the **Management Committee for the Advisory Process**. It assigns advisory tasks to the Advisory Committee on Fishery Management, the Advisory Committee on the Marine Environment, or the Advisory Committee on Ecosystems.

Since production of scientific information and scientific advice are closely linked, there is an overlap in membership of these Committees.

The future

ICES will face many challenges in the future. Worldwide there are increasing pressures on marine ecosystems, including living resources. The North Atlantic, including the North Sea and the Baltic Sea, is no exception. Several international instruments have been agreed as a foundation to redress these problems, such as: the United Nations Convention on the Law of the Sea; the Agreement relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks; the Code of Conduct for Responsible Fisheries; as well as several international plans of action. The success of these international instruments, which contain commitments to apply the precautionary approach, depends heavily on the quality of the scientific advice that ICES and other scientific bodies are expected to provide. Decision-makers need advice that is unbiased, sound, and credible. The need for scientific advice to manage marine living resources in an ecosystem context to ensure sustainability has never been greater, and this advice will require a stronger and more comprehensive scientific foundation than ever before. Further, scientists need to describe the reliability and robustness of their advice.

ICES also recognises that there will be an increasing demand for a greater involvement by, and transparency to, interested groups. In recent years, the precarious state of an increasing number of fish stocks and ecosystems means that the scientific information and advice ICES provides also needs to be more accessible to groups with direct and indirect interests and to the broader public.

The ICES Mission

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

The Mission focuses attention on ICES' role in making the Vision a reality. It clearly embraces the need for advice as the ultimate driving force behind ICES, while at the same time it recognises that advancing scientific capability is the key to fulfilling this need. Sound and credible scientific advice depends on scientific information. Scientific information without a vehicle for translating it into advice will lose the focus it needs to be relevant and responsive.

Over the years, ICES' strength has been built on the twin pillars of scientific information and scientific advice, and this should not change in the future. This combination of scientific information and scientific advice is rare. So too is ICES' close partnership with management organisations, while still maintaining its integrity and credibility as an independent and authoritative scientific organisation.

The ICES Mission calls for:

Establishing effective arrangements to provide scientific advice;

Informing interested parties and the public objectively and effectively about marine ecosystem issues ;

Coordinating and enhancing physical, chemical, biological, and interdisciplinary research;

Fostering partnerships with other organisations that share a common interest;

Developing and maintaining accessible marine databases.

In reality, it is not ICES that produces the scientific information and scientific advice. It is the scientists, from government, academia, and other sectors from ICES Member Countries and elsewhere, who are the producers. To fulfil the Mission, ICES must continue to add value to these scientific efforts by being a leader in mobilising scientific resources to collect and manage data, conduct experiments, perform analyses, build models, and disseminate information.

The Mission statement is noteworthy in terms of the evolution of ICES. Marine ecosystems are inclusive of fisheries, but much broader and more complex. The emphasis on marine ecosystems does not diminish the priority that ICES will give to fisheries. Advice on fisheries will continue to be a prominent part of the ICES programme, with an increased application of the precautionary approach and within a wider ecosystem context. Also, the Mission recognises that ICES needs to build on its success as the premier scientific organisation relative to fisheries, in order to keep pace with evolving societal needs.

The ICES Strategy

Ultimately, ICES wants to be the most attractive scientific organisation it can be for scientists, and the most helpful scientific organisation it can be for the users of scientific advice. In response to this challenge, ICES designed its Strategy to address five critical themes: **Building a foundation of science, Producing the scientific advice decision-makers need, Fostering partnerships, The added value of ICES, and Informing the public.** For each theme, the Strategic Plan states one or more overarching goals, and activities to accomplish the goals. The list of activities is not exhaustive, and there is some overlap between goals. The intent is to illustrate the future orientation of ICES without being overly prescriptive.

Building a foundation of science

The critical question concerns the type of science required to fulfil the ICES Mission. In ICES' early years, the emerging scientific disciplines dealing with fisheries and oceans flourished together. Indeed, ICES played a key role in the early development of both. However, over the years, fisheries science and the mainstream of marine science have grown apart. Today, they tend to be practised by different groups of scientists, with most fisheries scientists residing in government fisheries institutes. The advice that is needed today is broader than that which can be provided by fisheries scientists on their own, because of the requirement to take account of the non-fish components of the marine ecosystem. In order to fulfil the Mission, the scientific foundation of ICES must integrate fisheries science within the wider framework of marine science, and seek to overcome divergences that may have arisen owing to the institutional structures within which many scientists work.

Goal 1. Understand the physical, chemical, and biological functioning of marine ecosystems

The world's oceans play a crucial role in the functioning of the global environment. They contain ecosystems driven by physical and chemical processes that shape the development of plants and animals. Their dependent biological communities influence these in turn. 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.

The activities listed below are illustrative of the strategy for this goal:

- *Describe, understand, and quantify the state and variability of the marine environment in terms of its physical, chemical, and biological processes;*
- *Understand and quantify the role of climate variability and its implications for marine ecosystems;*
- *Characterise biological diversity, and its importance in the functioning of marine ecosystems;*
- *Increase knowledge of the life history, stock structure, dynamics, and trophic relationships of living marine resources;*
- *Develop a classification system and map marine habitats;*
- *Modernise technologies and sampling designs for collecting, measuring, and enumerating marine organisms, and improve the precision and accuracy of resource surveys.*

Goal 2. Understand and quantify human impacts on marine ecosystems, including living marine resources

Human activities on land and sea have an impact on marine ecosystems. The effects can be direct, as when, for example, a fishing boat catches fish, or they can be indirect, as when, for instance, a farmer puts fertiliser on his land which then runs off into the sea and causes nutrient enrichment. Understanding the effects of human activities on marine eco-

systems is essential if scientists are to provide advice that will help to improve the way in which human activities that affect the sea are managed.

The following activities are illustrative of the strategy for this goal:

- *Evaluate the ecosystem effects of fishing, and of mariculture;*
- *Evaluate the ecosystem consequences of contaminants and eutrophication;*
- *Evaluate the consequences of physical habitat change on the marine ecosystem;*
- *Evaluate the potential impacts of intentional and accidental introductions of non-native species, including genetically modified organisms, on marine ecosystems.*

Goal 3. Evaluate options for sustainable marine-related industries, particularly fishing and mariculture

Marine-related industries, such as fishing and mariculture, provide many benefits to society, including food, recreation, employment, and cultural satisfaction. However, marine-related industries affect marine ecosystems, and they are affected by natural changes in the marine environment. For fisheries and mariculture, sustainability is usually a prerequisite for a high level of benefits without undue adverse impact on marine ecosystems.

Evaluating the performance (benefits, costs, ecosystem impacts) of alternative ways of conducting marine-related industries is a challenging scientific endeavour. For example, fisheries exist within complex ecosystems with many elements of uncertainty. New exploitation strategies that take account of complexity (such as trophic interactions) and uncertainty (such as effects of natural variability and climate change) need to be evaluated. Research to advance mariculture techniques in an environmentally sound manner, is also a challenge. All human activities that depend on, and affect, marine ecosystems, have social and economic consequences that need to be better understood.

The following activities are illustrative of the strategy for this goal:

- *Design robust exploitation strategies for living marine resources, taking into account ecosystem complexity and uncertainty;*
- *Design and test harvesting technology that is more selective and more environmentally benign;*
- *Demonstrate ways of working with, and using the knowledge of, stakeholders (such as the fishing industry) as part of a programme of research on living marine resources and marine ecosystems;*
- *Develop environmentally sound mariculture methods;*
- *Develop indicators of sustainability for fisheries;*
- *Collaborate on research methods for assessing the social and economic aspects of human interactions with marine ecosystems.*

Producing the scientific advice decision-makers need

ICES is well established as a source of scientific advice on fishery management. The demand for fishery management advice is increasing, and ICES acknowledges the importance of continuing to deliver this type of advice. However, the advice needed goes far beyond traditional assessments of the status of fish and fisheries. These are demanding enough, but today's complex issues require integration of both fisheries and environmental information into useful advice.

To fulfil the ICES Mission successfully, the Strategy must ensure that production of the scientific advice that users depend on today is not jeopardised. At the same time, the recent initiative on preparation of advice on emerging ecosystem issues must be nurtured and expanded. The goal is to develop protocols for preparing advice and the institutional arrangements for delivering advice.

Goal 4. Advise on the sustainable use of living marine resources and protection of the marine environment

Whilst scientific information is the foundation of ICES advice, the way in which the advice is prepared must meet the needs of decision-makers. ICES has been pioneering the development of protocols to meet these needs, and it is ICES' goal to continue to do so in the future. ICES intends to provide high quality, objective, robust, and timely scientific advice. ICES' access to a large number of experts means it is uniquely placed to provide such advice. To achieve its goal, however, ICES must ensure that all the components of the advisory process work effectively together.

The following activities are illustrative of the strategy for this goal:

- *Maintain and enhance access to the best scientific expertise relevant to advisory needs;*
- *Develop quality assurance protocols to enhance confidence in scientific advice;*
- *Engage in a constructive dialogue with users of advice and stakeholders to improve the relevance, quality, and timeliness of advice;*
- *Further develop practical ways of applying the precautionary approach and the ecosystem approach, including the possible use of indicators of sustainability for fisheries;*
- *Improve the assessment of fish stocks, and design new stock-assessment methods that incorporate environmental information;*
- *Improve the basis for assessment of environmental conditions, and the status and outlook of marine ecosystems;*
- *Develop procedures for integrated coastal zone management, including protocols for environmentally sound mariculture practices;*
- *Communicate with interested parties, such as the fishing industry, on the nature of ICES' advice and why it is important, and give due consideration to their perspective;*
- *Ensure that the research conducted under Goals 1 to 3 reflects the needs of scientific advice.*

Fostering partnerships

The ICES Vision goes far beyond the capacities of any single organisation. The vision requires partnerships with national science institutes, regulatory commissions, other intergovernmental scientific organisations (IGOs), non-governmental scientific organisations (NGOs), the fishing industry, and other stakeholders that share the ICES Vision.

The strategy establishes the following goal to foster partnerships:

Goal 5. Enhance collaboration with organisations, scientific programmes, and stakeholders (including the fishing industry) that are relevant to the ICES goals

ICES can accomplish more through collaboration than it can alone, particularly since there are other organisations that have more experience and expertise than ICES in some scientific disciplines (e.g., fundamental oceanographic processes, advanced technologies, social sciences) that are needed to fulfil the ICES goals.

ICES has a long history of cooperation among and between its Member Countries and international organisations. This has led to its successful implementation of regional research programmes that address issues ranging from transboundary fishery matters to large oceanographic experiments requiring substantial resources. ICES provides a forum for coordinating such work and mobilising assets to address issues of regional and potential global interest. Where appropriate, ICES will take the lead in such programmes and will play an active supporting role in others. The following activities are illustrative of the strategy for this goal:

- *Continue to establish formal arrangements, such as Memoranda of Understanding, with scientific organisations and regulatory commissions that share the ICES Vision;*

- *Exchange observers with the aforementioned organisations and arrange for the exchange of scientific documents;*
- *Foster collaboration with relevant international programmes to develop integrated approaches to marine science in regional seas;*
- *Play an active role in the design, implementation, and execution of global and regional science programmes;*
- *Increase the dialogue with, and feedback from, management bodies and Member Countries through Dialogue Meetings and other processes;*
- *Make ICES expertise accessible to developing countries and countries in transition;*
- *Coordinate monitoring and data management programmes that underpin ongoing ICES science programmes.*

The added value of ICES

The reason for ICES' existence is to produce scientific information and scientific advice more valuable and greater than the sum of the individual contributions of its Member Countries. ICES adds value to the efforts of Member Countries and individual scientists by fostering the sharing of human and material assets, and by pooling resources to support common goals. To continue to be effective, ICES must carry out and coordinate programmes in the most economical manner practicable, maintain and further develop a modern infrastructure, set priorities to achieve goals within budget constraints, and attract additional resources to support ICES programmes. To ensure that ICES adds value, the strategy establishes the following goals.

Goal 6. Maintain and further develop a modern and effective infrastructure to support ICES programmes

To accomplish its strategy, ICES must provide many forms of support, referred to as infrastructure. Effective infrastructure takes advantage of modern technology, it applies sound administrative practices, and it invests in staff. It includes the publication of scientific information in a manner that is appealing to a broad scientific community, so that ICES can continue to attract outstanding scientists.

The following activities are illustrative of the strategy for this goal:

- *Maintain and improve the motivation and productivity of the Secretariat;*
- *Integrate and expand databases to support ICES programmes within a well-defined data management policy;*
- *Develop a cooperative framework for the production and exchange of scientific software;*
- *Invest in information technology (IT) to facilitate ICES communications and enhance production of documents and information databases;*
- *Encourage the development and application of new technologies and standards;*
- *Encourage the production of high-quality scientific publication by ICES.*

Goal 7. Keep abreast of the needs and expectations of ICES Member Countries

First and foremost, ICES must be responsive to the scientific information needs of its members. As the needs of the Member Countries are becoming more complex, diverse, and dynamic, it is no longer prudent for ICES to assume that national Delegates alone can maintain a comprehensive and up-to-date overview of their countries' needs. The following activities are illustrative of the strategy for this goal:

- *Encourage Delegates to establish arrangements for gathering broad input (i.e., going beyond the organisations that have traditionally had an interest in ICES) for the identification of national needs and priorities;*

- *Make national authorities aware of the ICES Strategic Plan and seek their advice on future refinements of it;*
- *Tailor information packages about ICES and its accomplishments to national interests and needs.*

Goal 8. Broaden the diversity of the scientists who participate in ICES activities

ICES cannot fully realise its vision without mobilising a broader community of marine scientists. Participants in ICES activities have traditionally been from government laboratories, with relatively few academic participants. The credibility and authority of ICES is weakened if significant groups of the marine science community do not contribute to ICES activities. ICES must become more accessible and attractive to this wider community. The following activities are illustrative of the strategy for this goal:

- *Continue to widen the appeal of the Annual Science Conference;*
- *Broaden the scope and readership of publications;*
- *Continue to develop plans for stimulating symposia;*
- *Initiate new partnerships to broaden the scientific horizons of ICES and address emerging issues;*
- *Modernise ICES to make it more open, on a worldwide basis, to non-governmental scientists, particularly academics;*
- *Actively encourage women, and others from underrepresented groups with diverse backgrounds, to become members of the ICES community.*

Goal 9. Match the budget of ICES to the needs and expectations for scientific information and advice

The high-quality scientific information and advice that ICES envisages cannot be produced without adequate financial resources. Stable funding is required to fulfil needs for increasing scientific understanding, providing scientific advice on an ongoing basis, and maintaining necessary infrastructure. Since funding will always be limited, it is essential that it be used in a cost-effective manner, and that ICES look for synergistic cooperation with other organisations to fulfil its Mission. The following activities are illustrative of the strategy for this goal:

- *Continuously review the organisation, operating procedures, business practices, and staffing to ensure efficiency;*
- *Implement full cost recovery for requested scientific advice;*
- *Seek additional financial support for the ICES scientific programme.*

Informing the public

Issues dealing with marine ecosystems are complex and difficult to understand, even for scientists. Nevertheless, environmental, climate, and global change, as well as fisheries issues, are high on the agenda of administrators, politicians, and the media. One of the tasks of ICES is to help increase the level of public understanding of the ecosystem science behind such issues.

Goal 10. Make the scientific products of ICES more accessible to the public

Ultimately, the greatest contribution made by sound scientific information may be the influence it has on public opinion. There are many organisations that use scientific information to help stress their points of view when it comes to environmental issues and living marine resources. However, their interpretation of scientific information is not always objective. The sole reason for ICES to make scientific information more accessible to a wider public is to provide an unbiased scientific basis for public opinion and policies.

The following activities are illustrative of the strategy for this goal:

- *Establish lines of communication with national and international media outlets that are interested in scientific information on marine ecosystems and effects of human activity on them;*
- *Communicate scientific information to the public in an easily understood manner;*
- *Establish a distributed database of educational material;*
- *Prepare documentation of important scientific accomplishments, tailored for non-scientists;*
- *Maximise the use of electronic media to distribute ICES scientific products, including electronic publications and the ICES Website as a source for “living documents” that are updated as soon as new information is produced.*

Implementing the Strategy: Next Steps

The publication of a Strategic Plan only marks a milestone in an effective strategic planning process. It makes a statement about the intentions of an organisation, but actions and accomplishments are what count. Also, 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. Prepare multi-year action plans that relate activities and costs to the Strategic Plan

These action plans will be the method that ICES will use to fulfil its Strategy. They will apply to the activities at all levels of ICES, including committees, working groups, study groups, the Council and Bureau, and the Secretariat. In the latter case, the action plans will need to mesh with the Workplan now used by the Secretariat to plan and manage its activities. Since all activities have a cost implication in terms of staff and resources, the action plans will be a useful way of helping to prioritise the allocation of budgets.

A key step in the preparation of the action plans will be to review relevant scientific programmes that exist, or are planned, in Member Countries, and collectively to evaluate the priority needs for scientific advice, today and in the future. ICES also needs to become more familiar with relevant programmes conducted by other international organisations so that it can complement and build on them – without competing. A key aspect of formulating implementation plans is to engage Member Countries in the process, along with international partner organisations of ICES.

Step 2. Monitor performance

A strategic plan is not complete unless it specifies a way to evaluate its success. A series of easily checkable performance measures (things that can be measured and related to the degree of success in achieving goals) will be identified. Developing performance indicators and conducting peer reviews of ICES programmes on a regular basis will be keys to monitoring performance.

Step 3. Update the ICES Strategic Plan on a regular basis

The ICES Strategic Plan should be updated on a regular basis. In general, a five-year time horizon for strategic planning is a reasonable compromise between the need for patience in addressing scientific goals and the realisation that the setting in which ICES operates is evolving rapidly.

Concluding Remarks

ICES embarked on its strategic planning process because it realised that the world is rapidly changing, it recognised that past successes and current strengths do not automatically translate into a bright future, and it is determined to be as relevant and productive in the future as it can be. Publishing the ICES Strategic Plan is an important accomplishment, but the processes of self-examination, internal and external dialogue, and critical thinking about the future are the real benefit.

Ultimately, the ICES Strategic Plan depends on the people that participate in ICES, and the future of ICES depends on its continuing ability to attract outstanding scientists. ICES is confident that its plan to help fulfil a vision of a relevant, responsive, sound, and credible international scientific community, when it comes to marine ecosystems and their relation to humanity, will attract outstanding scientists. This is the scientific community society needs, as we move into the 21st century.