ICES operates in a complex and changing marine science landscape. The diagram above lists some of the organizations ICES collaborates with. The roles are overlapping and examples listed not exhaustive1.

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

Marine policy and legal instruments call for a strong science background to support their objectives and goals.

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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 Arctic Science Committee (IASC), 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), Mediterranean Science Commission (CIESM), 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)..

The ICES Strategic Plan takes cognizance of these changing landscapes to ensure that ICES maintains and enhances its capability and relevance in providing scientific advice for marine management policies.

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.

The Annex to this document lists a number of human activities and cross-cutting themes, together with corresponding main policy drivers, organizations and their relation to ICES core areas/work priorities. The Annex also contains an outline of overall policy and legal frameworks. The Annex does not aim to give an exhaustive overview, but rather a reference to initiatives and programmes most relevant to ICES. To take account of changes and new developments, this Annex will be updated regularly and used for (a) the annual review of the ICES Strategic Plan and (b) the associated implementation plans for data and information services, science, advice, and the ICES Secretariat.

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 bi- or multilateral agreements among ICES member Countries, 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 pressures of different human activities on marine ecosystems. Although there is a need for an integrated approach to achieving healthy oceans, such development must be based on sustainable sectoral management. Hence, there is a continued need to develop sector-specific technical requirements.

ICES recognizes that its core expertise lies in scientific understanding of marine ecosystems. The productivity of marine ecosystems will change in response to many factors, including human pressures and impacts of climate change on marine ecosystems, particularly 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.

Though different challenges confront different oceanic and regional sea areas, ICES possesses the expertise, experience, and creativity to address many of these challenges.

Through its role as an independent marine science organization, working at the science–policy interface ICES provides evidence-based knowledge and advice to support decision-making.

ICES scientific activities focus on the North Atlantic and adjacent European seas, as well as the Arctic Ocean. The work of ICES is complemented by strategic partnerships, *e.g.*, in the North Pacific (with PICES) and in the Mediterranean Sea (with CIESM and GFCM). Well

established links to technology and innovation platforms, industry associations, and non-governmental organizations and observers ensure that ICES remains relevant and responsive to both end users and the public for the uptake of the scientific knowledge and deliverables that it generates. Interactions with clients, stakeholders, and partners are also important in identifying priorities for ICES.

The work of ICES is facilitated through a network of more than 4000 scientists, from over 350 marine institutes in 20 member countries and beyond (with ICES experts coming from 45 countries), and the frequent engagement of other inter-governmental and non-governmental organizations, as well as industry.

Annex Overall, sectoral, and cross-cutting policy and legal frameworks

A. Fundamental overall policy and legal frameworks with bearing on the protection and management of the marine environment and resources

The United Nations Convention on the Law of the Sea (UNCLOS), 1982 sets out the constitution for the governance regime on the use and preservation of the oceans, e.g. Part V Exclusive Economic Zone, which includes a call for a maximum sustainable yield (MSY) approach to managing fisheries, Part XII Protection and Preservation of the Marine Environment, part XIII Marine Scientific Research Section.

In addition, global gatherings, like the UNCED, WSSD, and Rio+20, have set the pace developing new international principles, e.g. the precautionary approach, the polluter pays principle, sustainable development, the application of the ecosystem based approach, and new international regimes (*e.g.*, the Framework Convention on Climate Change and the Convention on Biological Diversity).

- United Nations Convention on the Law of the Sea (UNCLOS), 1982
- The United Nations Conference on Environment and Development (UNCED), 1992 Rio Conference
- World Summit on Sustainable Development (WSSD), 2002 Johannesburg Summit
- United Nations Conference on Sustainable Development (Rio+20), 2012 Rio Conference

In the European Union, regional implementation of global policies is conducted through i) EU policies, such as the Common Fisheries Policy (Council Regulation 2371/2002) and the Integrated Maritime Policy (COM(2007) 575), ii) EU directives, such as the Marine Strategy Framework Directives (2008/56/EC) and iii) EU Strategies, such as the European Strategy for the Sustainable Development of European Aquaculture (COM(2002) 511) and the European Strategy for Marine and Maritime Research (COM(2008) 534).

On national level, these policies are implemented by EU member states, while non-EU member countries of ICES, both in North America and Europe, have similar policy frameworks at the national and multi-national levels. The multinational level includes Regional Environmental (such as the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM) and Fisheries Commissions (such as North East Atlantic Fisheries Commission (NEAFC), North Atlantic Salmon Conservation Organization (NASCO), and Northwest Atlantic Fisheries Organisation (NAFO)) as well as global programmes and conventions.

B. Several sectoral policies and legal instruments have been implemented for the management of specific human activities, as outlined below.

Although there is a need for an integrated approach to achieving healthy oceans, such development must be based on sustainable sectoral management. Hence, there is a continued need to develop sector-specific technical requirements. The table below sets out the policy and legal framework for the main human ocean related activities, the key players/initiatives within each field, and identifies the relation to core ICES activities.

Human Activities in the Marine Environment

	Global Policy/legal framework	**Regional and National Policy/legal Framework**	**Relevant Organizations**	**Relevant initiatives and projects**	**ICES role(s)**
Fisheries	UNCLOS, 1982 UNCLOS Fish Stock Agreement, WSSD (e.g. MSY), FAO Code of Conduct for Responsible Fisheries, 1995 International Convention for the Conservation of Atlantic Tunas, ICCAT, 1966 Convention for the Conservation of Salmon in the North Atlantic	Common Fisheries Policy (revised COM(2011) 425) EU Data Collection Multi-Annual Programme (EU DC-MAP) EU Sea Basin Strategies European Strategy Innovating for sustainable growth (COM(2012) 60). Oceans Act, Statutes of Canada, 1996 Fisheries Act, Revised Statutes of Canada, 1985 Sustainable Fisheries Framework, DFO, Canada Coastal Fisheries Protection Act, Revised Statutes of Canada, 1985, Norwegian Marine Resources Act, 2008, Russian Federal Law on Fisheries and Conservation of Aquatic Biological Resources, 2004 Icelandic Fisheries Management Act, 2006	FAO, JRC, Regional fishery Commissions, European Fisheries Technology Platform (EFTP)	RDB-FishFrame JPI Oceans EraNets COFASP, SEAS-ERA Art. 185 BONUS	An ICES Core function is to provide scientific information and advice to ensure informed decision-making in fisheries management and policy development.

	Ocean, NASCO, 1982 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, FAO, 1993 Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, NAFO, 1979 International Convention for the Regulation of Whaling, IWC, 1946	Act concerning the Treatment of Commercial Marine Stocks in Iceland, 1996 Act on Fishing in Iceland's Exclusive Fishing Zone, 1997 Faroe Islands Fisheries Management Act, 1994 Norwegian-Russian Agreement on Cooperation in the Fishing Industry, 1975 Norwegian-Russian Agreement on Mutual Relations in Fisheries,1976 Government of Denmark and Home Government of the Faroe Islands and Russia Agreement on fisheries relations between the USSR and the Faroe Islands, 1977 Government of Denmark and the Home Rule Government of Greenland and Russian Agreement on fisheries relations between the Russian Federation and Greenland, 1992 Icelandic-Russian Agreement on Cooperation in Fisheries, 2000 U.S. Magnuson-Stevens Fishery Conservation and Management Act, 2006 U.S. Moratorium Protection Act (16 U.S.C.1826d–k)			

		U.S. Shark and Fishery Conservation Act, 2011 U.S. High Seas Fishing Compliance Act. 16 USC 5501 et seq U.S. Whaling Convention Act, 1949			
Maritime Transport	Various IMO instruments, conventions, guidelines, etc	**EU** Various Directives relating to the IMO instruments **Regional** Regional Seas Conventions, specifically in the Baltic and in the Mediterranean Communication - An Integrated Maritime Policy for the European Union, with regional specific strategies/communications for the 1) Baltic (2009), 2) Mediterranean (2009), with sub-regional cooperation in the Adriatic and Ionian Seas 3) Danube (2011) 4) Atlantic (2011) 5) Black Sea – in preparation 6) Arctic (2012) **National** Navigable Waters Protection act, Revised Statutes of Canada, 1985, c. N-22 Canada Shipping act, 2001	IMO Regional Seas Conventions EU European Technology Platform WATERBORNE	EraNet MARTEC 2 Art. 185 BONUS	ICES core function as regards established cooperation structure, and geographical coverage through membership ICES possesses considerable expertise on invasive species. Joint endeavours with the International Oceanographic Commission (IOC) and the International Maritime Organization (IMO) has forged closer links between science and policy needs through scientific/technical inputs to IMO's work

Aquaculture	ISO/OSI	Communication on Blue Growth opportunities for marine and maritime sustainable growth (COM(2012) 494). Building a sustainable future for aquaculture. A new impetus for the Strategy for the Sustainable Development of European Aquaculture, COM (2009) 162. Strategic Guidelines for the sustainable development of EU aquaculture (COM(2013) 229). Oceans Act, Statutes of Canada, 1996 Fisheries Act, Revised Statutes of Canada, 1985, c. F-14 Norwegian Aquaculture Act, 2005 Norwegian Act Relative to Food Production and Food Safety Act (The Food Safety Act 2003) Russian Federal Law on Aquaculture, 2013 Icelandic Aquaculture Act, 2012. Memorandum of Understanding on Cooperation on Fisheries Issues between NOAA and the Ministry of Fisheries and Coastal Affairs of	European Aquaculture Society (EAS), International Standards Organization/Technical Committee (ISO/TC) 234 "Fisheries and Aquaculture", European Aquaculture Technology and Innovation Platform (EATIP) EFARO	EU Strategic Working Group on Fisheries and Aquaculture (SCAR-Fish); EraNet COFASP MARCOM+	Newly decided Strategic area of ICES, through the new WG AQUA to build on work carried out in various WGs; liaise with the European and NA industry through MARCOM+; possible cooperation with CIESM on blue growth issues ("genetic mining")

		Norway, 2008 U.S. National Marine Aquaculture Policy, 2011			
Renewable Energy and Biotech		Communication on Blue Growth opportunities for marine and maritime sustainable growth (COM(2012) 494).	Biotech: CIESM	JPI Oceans New EraNet on Blue Biotechnology	Some ICES work in this area; (Study Group on Environmental Impacts of Wave and Tidal Energy, Working Groups on Benthos and Sea Bird Ecology and Renewable Energy Developments, Working Group on Marine Renewable Energy (from 2014), and Workshop on Wave and Tidal Energy Test Sites)

Each of the above human activities has to be considered in a wider context, in order to address the cumulative impacts of sectoral activities on the marine environment, to help frame the conditions where the interactions between the natural environment and different human uses equals a sustainable management regime. This additionally includes monitoring and collection of data, for use in the assessment of human impacts on the marine ecosystems, and natural variations. And while this serves as the basis for decision-making it also makes up the foundation for the synthesis of information and presentation to the public of the status and productivity of our seas.

Cross-cutting themes

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
Marine observation systems, Data Access, and Streams	Global Ocean Observing System (GOOS, IOC) ICES Data policy INSPIRE/WISE	RSC data policies Joint Russian-Norwegian Scientific Research Programme on Living Marine Resources U.S. Integrated Coastal and Ocean Observation System Act, 2009	Regional Seas Commissions, EU, EEA, JRC, International Ocean Biogeographic Information System (OBIS) Canada St. Lawrence Global observatory (SLGO/OGSL) Canada Marine Environmental Observation Prediction and Response Network	European Marine Observation and Data Network (EMODnet)	ICES core area

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
			(MEOPAR) Canada		
Maritime Spatial Planning	Convention on Biological Diversity (COP Decision X/29)	Integrated Maritime Policy COM(2007) 575 Proposal for EU Directive establishing a framework for maritime spatial planning and integrated coastal management COM(2013) 133. Regional Seas Conventions Integrated Management Plans for the Norwegian EEZ U.S. Coastal Zone Management Act, 1972 U.S. National Ocean Policy, 2013 Oceans Act, Statutes of Canada, 1996			ICES WGICZM ICES service provided through its GIS facility
Marine Protected Areas	Convention on Biological	Directive 92/43/EEC on the conservation of natural	CBD, Regional Seas Commissions		ICES well positioned to contribute to: - Scientific information and advice on

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
(MPAs)	Diversity (CBD) 2011 Aichi Biodiversity Targets (*e.g.*, 10% MPA target) Ecologically or Biologically Significant Marine Areas (EBSAs)	habitats and of wild fauna and flora (Habitat Directive) Directive 2009/147/EC on the conservation of wild birds (Birds Directive) 2020 Biodiversity Strategy Work of regional Seas Commissions (*e.g.*, HELCOM and OSPAR to establish ecological, coherent and well-managed networks of MPAs) Oceans Act, Statutes of Canada, 1996 U.S. National Marine Sanctuaries Act, 2000			deep-sea habitats in need of protection, and on related regulatory measures. - Creation and implementation of a framework to identify and protect vulnerable marine habitats in the North Atlantic and Arctic. - Assessments and advice regarding vital ocean and coastal habitats, at the regional level jointly with partner commissions
Ecosystem Approach	CBD (COP Decisions V/6 and VII/5) Johannesburg Plan of Implementation RIO+20	Marine Strategy Framework Directive (MSFD) and Regional Seas Conventions Norwegian Marine Resources Act, 2008 Russian Federal Law on	Regional Seas Commissions	UN Regular Process	ICES strategic area, with emerging work aimed at providing integrated ecosystem assessments and advice at regional level

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
	Global Ocean Ecosystem Dynamics, 1991, GLOBEC/UNESCO	Environmental Impact Assessment, 1995 Act on Fishing in Iceland's Exclusive Fishing Zone, 1997, Add. 2007 Sustainable Fisheries Framework, DFO, Canada U.S. Marine Mammal Protection Act, 1972			
Climate change and impacts (e.g. Ocean acidification)	UN Framework Convention on Climate Change (UNFCC)	U.S. Federal Ocean Acidification Research and Monitoring (FOARAM) Act, 2009 U.S. Harmful Algal Bloom and Hypoxia Amendments Act, 2004	European Climate Adaptation Platform PICES BALTEX (regional research network, assessing Climate Change for the Baltic Sea basin) Regional Seas Commissions	ICES Strategic Initiative on Climate Change (SICCME)	ICES annual report on Ocean Climate, and status and trends for the North Atlantic Collaboration with strategic partners (e.g. PICES) conference series on climate change and impacts on oceans and ecosystems (e.g. Joint OSPAR/ICES Ocean Acidification Study Group)
Arctic	IMO – on transportation in the Arctic (The Polar	The A8 Countries 2012 Communication; Developing a European Union Policy towards the	The A8 Countries Arctic Council, est. by the Ottawa Declaration, 1996	Sustaining Arctic Observing Networks	Newly decided strategic area of ICES; work already carried out by ICES in the WGARCTIC as well as in the field of data management for SAON/AMAP,

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
	Code)	Arctic Region: progress since 2008 Strategy for Development of the Arctic Zone of the Russian Federation and National Security for the timeframe until 2020, 2013. Arctic Waters Pollution Prevention Act, Revised statutes of Canada., 1985, c. A-12) Canada- Northern Land Claim Agreements Canadian Environmental Protection Act, Statutes of Canada 1999 The Canadian Environmental Assessment Act, 2012 Nunavut Scientists Act, 1988 Nunavut Wildlife Act, 1988 Department of Fisheries and Oceans Act, Revised Statutes of Canada, 1985	(PAME, CAFF (incl. CBMP-Marine), Arctic Monitoring and Assessment Programme (AMAP; incl. SAON)	(SAON)	under the Arctic Council

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
Geographic specific Maritime Strategies **e.g., for the Atlantic Ocean, and the Baltic Sea**		2013 Galway Declaration EU Maritime Strategies, with associated Action Plans for; - the Atlantic Ocean (2013); and the Baltic Sea Region (2009)	EU-Canada Joint Science and Technology Coordination Committee (JSTCC) EU-U.S. Joint Consultative Group Meeting on Science and Technology Cooperation		Within core geographic areas for ICES, covering all ICES member countries and dealing with ICES core competencies
Biodiversity	CBD, and the 2011 Aichi Biodiversity Targets Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) Agreement on the Conservation of Albatrosses and Petrels, 2001	EU 2020 Biodiversity Strategy Nature Convention on the conservation of European wildlife and natural habitats (Bern Convention) Russian Federal Law on Animal World, 1995 U.S. Coral Reef Conservation Act, 2000 U.S. Endangered Species Act, 1973	Regional Seas Commissions	Global Biodiversity Information Facility (GBIF) Group on Earth Observations Biodiversity Observation Network (GEO BON) The World (and other) registers of marine Species (WoRMS, NARMS, ERMS) Biodiversity	ICES strategic ACOM/SCICOM initiative on biodiversity

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Species at Risk Act, Statutes of Canada, 2002		Information System for Europe (BISE)	
Synthesis of scientific knowledge/ Presentation and Public access to information	UN Regular Process for global reporting and assessment of the state of the marine environment Millennium Ecosystem Assessment Report of the United Nations Secretary-General on oceans and the law of the sea, with specific themes on e.g. sustainable	EU Strategy for Marine and Maritime Research, COM(2008) 534 INSPIRE directive NOAA's Scientific Integrity Policy, 2011 The Canadian (DFO) "Five-Year Research Agenda" (2007-2012) The Canadian (DFO) "Five-Year Research Plan" (2008-2013) The US "Science for an Ocean Nation" plan The US (NOAA) "5 year plan" The US (NOAA) "Next Generation Strategic Plan"	UNESCO, IOC, JRC Joint Research Center (JRC) The European Fisheries and Aquaculture Research Organisation (EFARO) Regional Seas Commissions Regional ERA-net; networking of research activities conducted at national or regional level, and mutual opening of national and regional research	MarBEF+ (legally consolidated network of excellence, 94 European marine institutes for the integration and dissemination of knowledge and expertise on marine biodiversity, with links to researchers, industry, stakeholders and the general public) EuroMarine – working for further	Core ICES function

	Global Policy	Regional and national Policy/Legal Framework	Relevant Organizations	Relevant initiatives and projects	ICES role(s)
	fisheries Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)		programmes, e.g. BONUS (Baltic – comprehensive science and sectors), SEAS-ERA (overarching marine science) COFASP (fisheries, seafood, aquaculture) European Technology Platforms; e.g. aquaculture, Fisheries and waterborne	integration of marine research in Europe (based on three FP6 marine Networks of Excellence) Joint Programming Initiative (JPI)	