# Knowledge Co-Production in the International Council for the Exploration of the Sea (ICES)

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General Secretary

PICES Annual Meeting

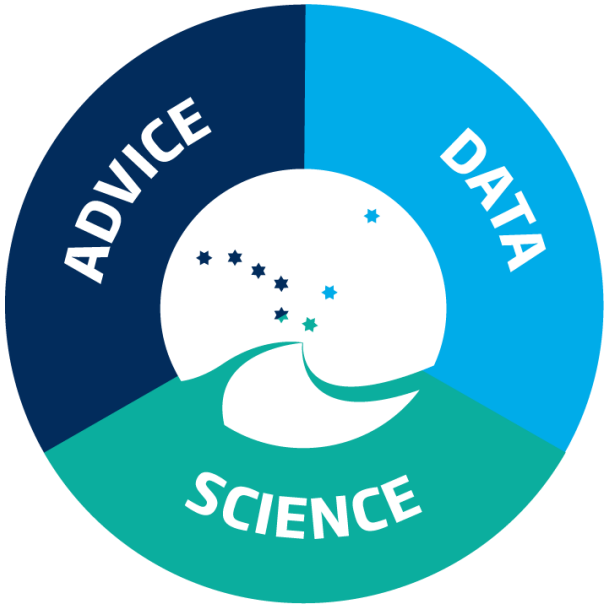
October 26, 2024

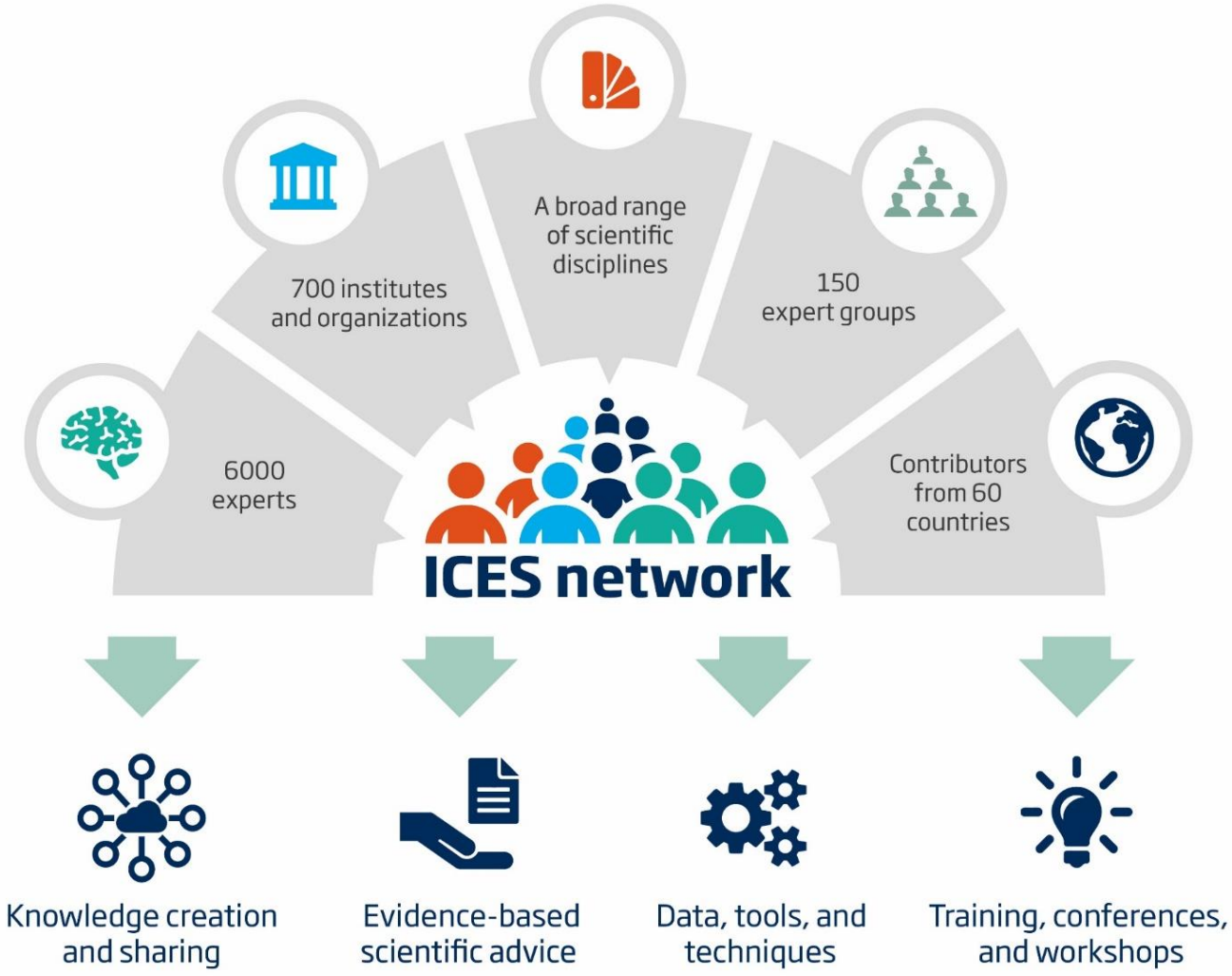
ICES
CIEM

Science for sustainable seas

# International Council for the Exploration of the Sea

Intergovernmental organization leading marine science cooperation since 1902

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# Science Cooperation

Through strategic partnerships our work in the Atlantic Ocean, and specifically the North Atlantic, extends into the Arctic, the Mediterranean, the Black Sea, and the North Pacific.


PICES

OSPAR COMMISSION
Protecting and conserving the North-East Atlantic and its resources

ICES CIEM

IMO

HELCOM

PAME
Protection of the Arctic Marine Environment

NORDIC MARINE THINK-TANK

EUROMARINE
EUROPEAN MARINE RESEARCH NETWORK

FAO
FIAT PANIS

AMAP
Arctic Monitoring and Assessment Programme

European Commission

EIFAAC CECPAI

IASC

GFCM CGPM

IUCN

CEM

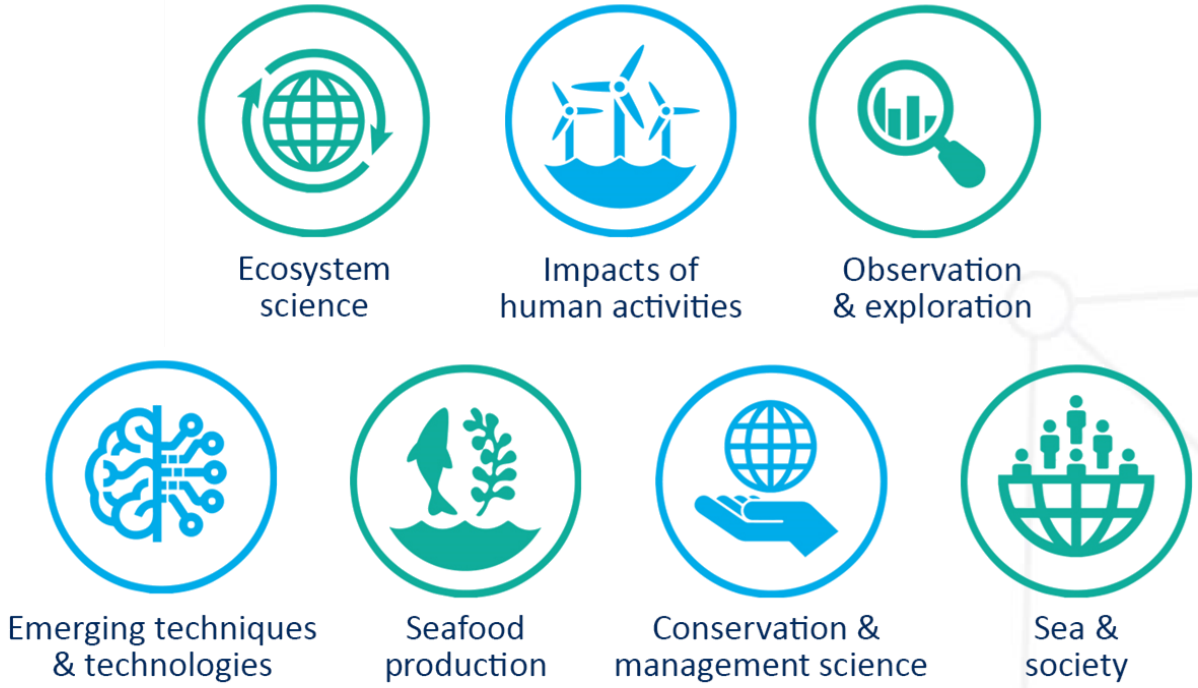
UNESCO
United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

CIESM
The Mediterranean Science Commission

# Translation and application of knowledge

## Science: knowledge creation




## Advice: knowledge translation

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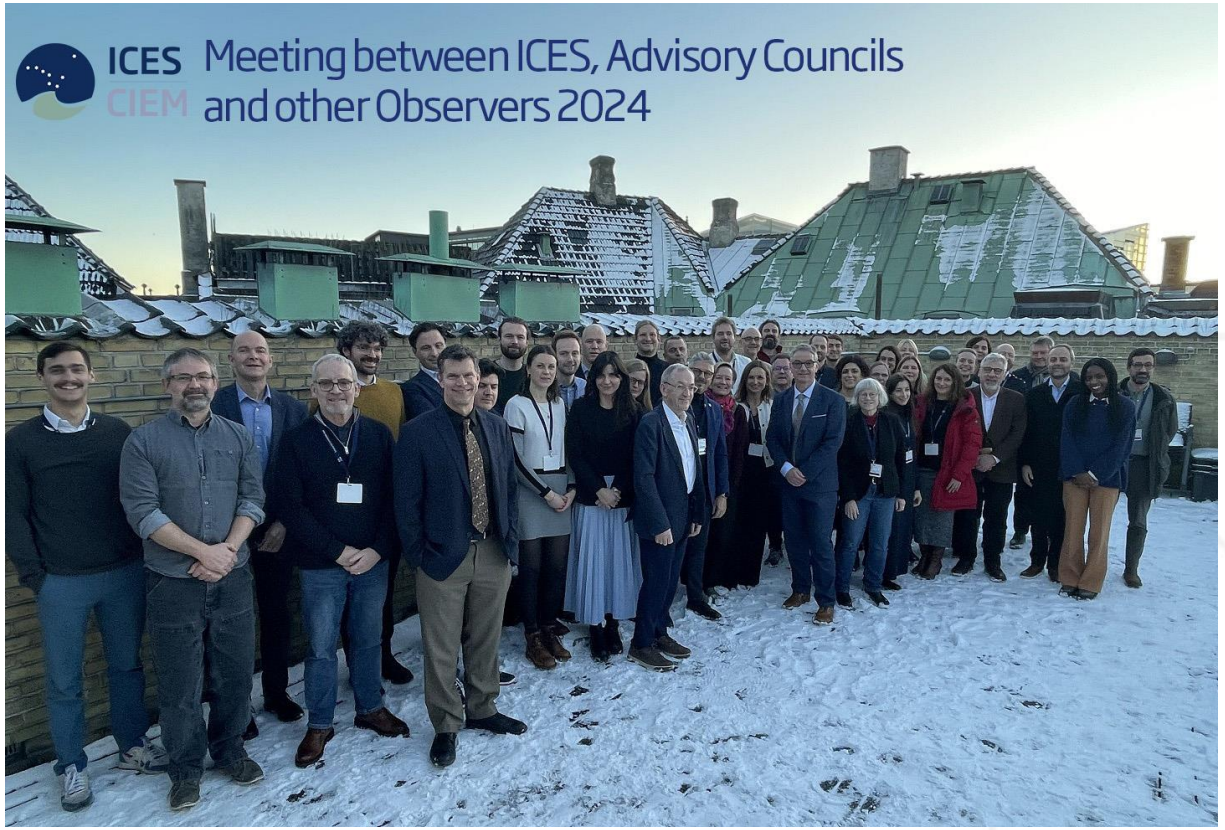
# Stakeholder Engagement: Stakeholder engagement strategy approved by ICES Council last October

- Stakeholder engagement - increasingly important and occurring in ICES
- Requesters of advice and Expert Groups, asking for stakeholder consultations on methods, data, knowledge input and communication of advice
- Observer expectations of engagement and consultation
- Captured by the most recent ICES Strategic, Science, and Advisory Plans
- Must be done correctly providing opportunities and challenges

# Annual Meetings with ICES Observers and Requesters of Advice enable regular dialog and continuous process improvement




# ICES advice principles

# Key requesters of advice

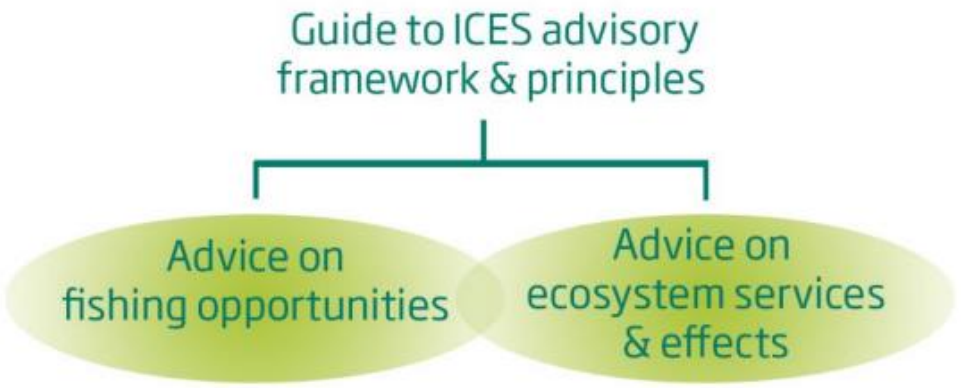
## Advice published 2023

**198**
Fishing opportunities

**17**
Special requests

**6**
Overviews + guides

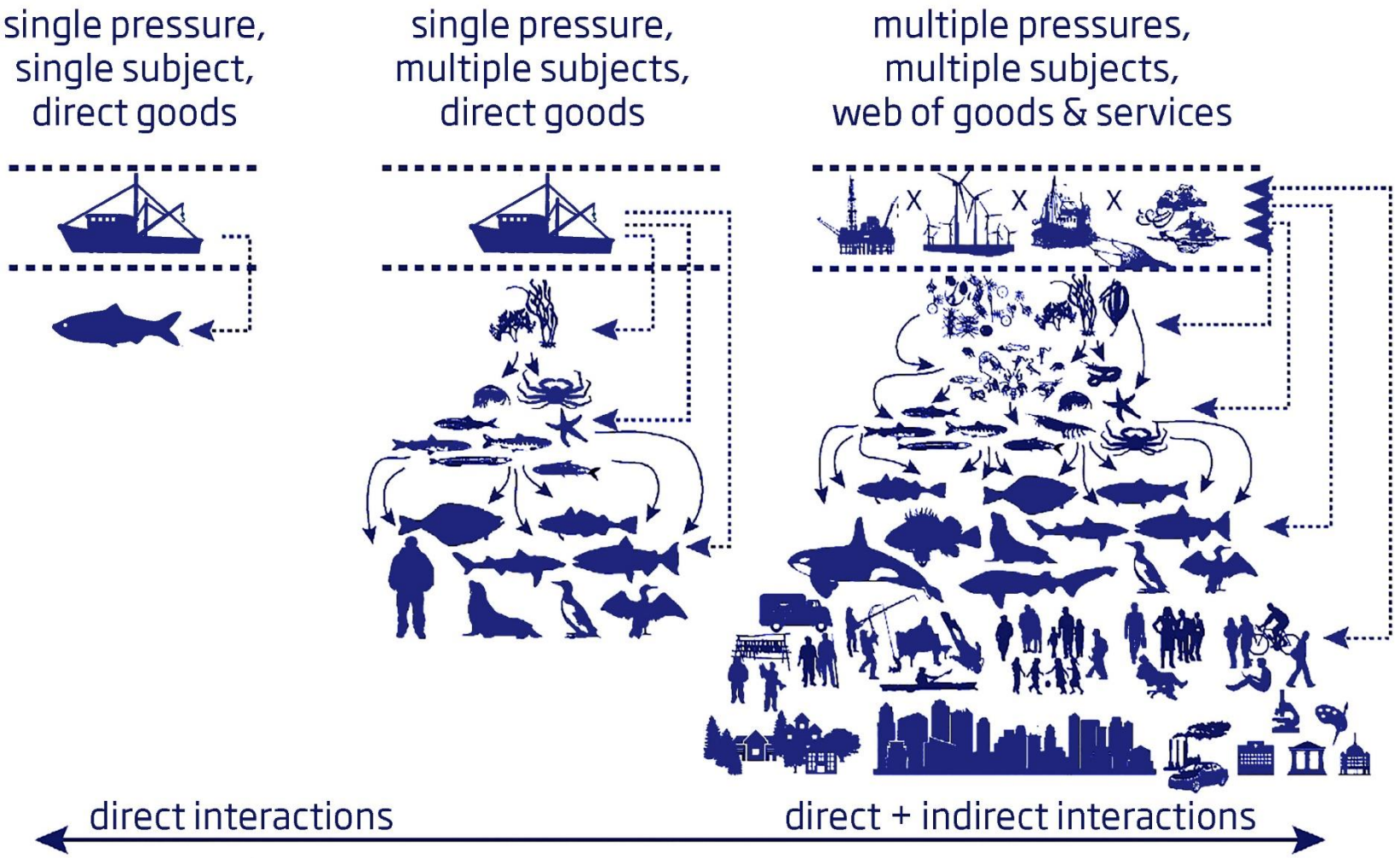
**7**
Technical services





https://www.ices.dk/advice/

# Shifting arena for ICES advice & science




*Holsman et al 2017 & ICES*

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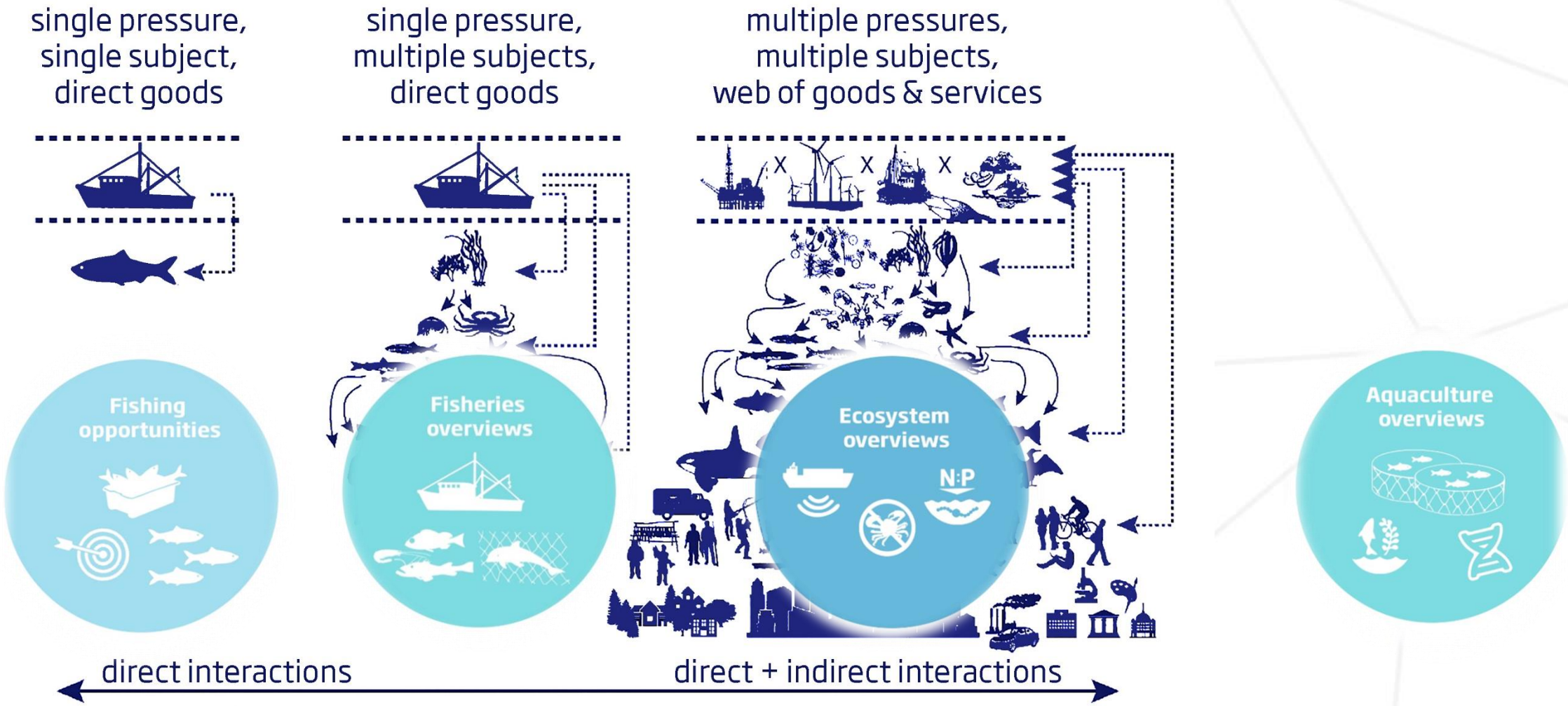



*Holsman et al 2017 & ICES*

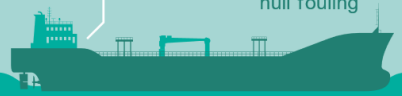
https://www.ices.dk/advice/Pages/Latest-Advice.aspx

ECOSYSTEM OVERVIEW 2022

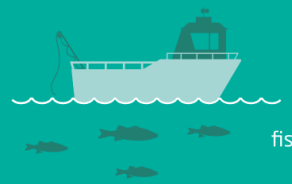
# GREATER NORTH SEA


**Introduction of non-indigenous species**

**53%** from shipping mainly through ballast water and hull fouling



**18%** from aquaculture



**Fishing** continues to be the main activity impacting ecosystem health, despite a decline in fishing effort in recent decades.

**Energy production**
Oil and gas industries remain one of the main activities impacting the marine ecosystem, primarily through contaminant pressure.

**Energy transition**
Pressures from oil and gas are expected to decline as pressures from offshore marine renewable energy production are expected to increase.

## State of the ecosystem

Two main seal species — grey seal and harbour seal — have increased in numbers from an all-time low in the 1970s.



Seabird abundance appears to be declining. Changes in migration patterns, reductions in breeding success, and lower survival are possible causes.

Most commercial stock sizes are effectively managed at levels consistent with achieving maximum sustainable yield (MSY).



Fishing-related physical disturbance of the seabed is the main pressure resulting in an overall decrease in invertebrate biomass.

There is a decrease of **20–90%** in fished areas, depending on how heavily the area is fished.

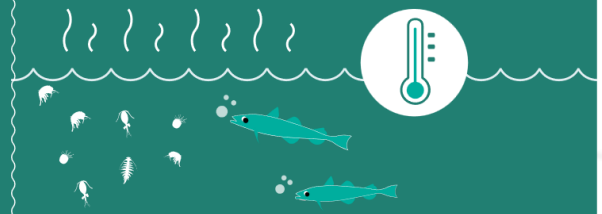
## Environmental and socio-economic context

**Increased fuel prices lead to:**

- Decreased fishing with bottom-towed gears
- Reduction of the extraction of demersal fish
- Reduction of the disturbance of seabed habitats
- Shift towards less fuel-intensive fisheries, such as gillnets
- Increased bycatch risk of seabirds and marine mammals
- Longer-term effects from lost and abandoned fishing gear

**Climate change**
An increase in sea surface temperature in the southern North Sea of between 1 and 2 degrees compared to the 1951–1980 average temperature.

This has changed the spatial distribution of several fish and plankton species within the ecoregion. This trend is likely to continue.



**Eutrophication** has reduced due to the introduction of measures to reduce nutrient input from rivers.

**Contributions of small-scale coastal fisheries**

**10%** of value landed

Regional importance in terms of employment

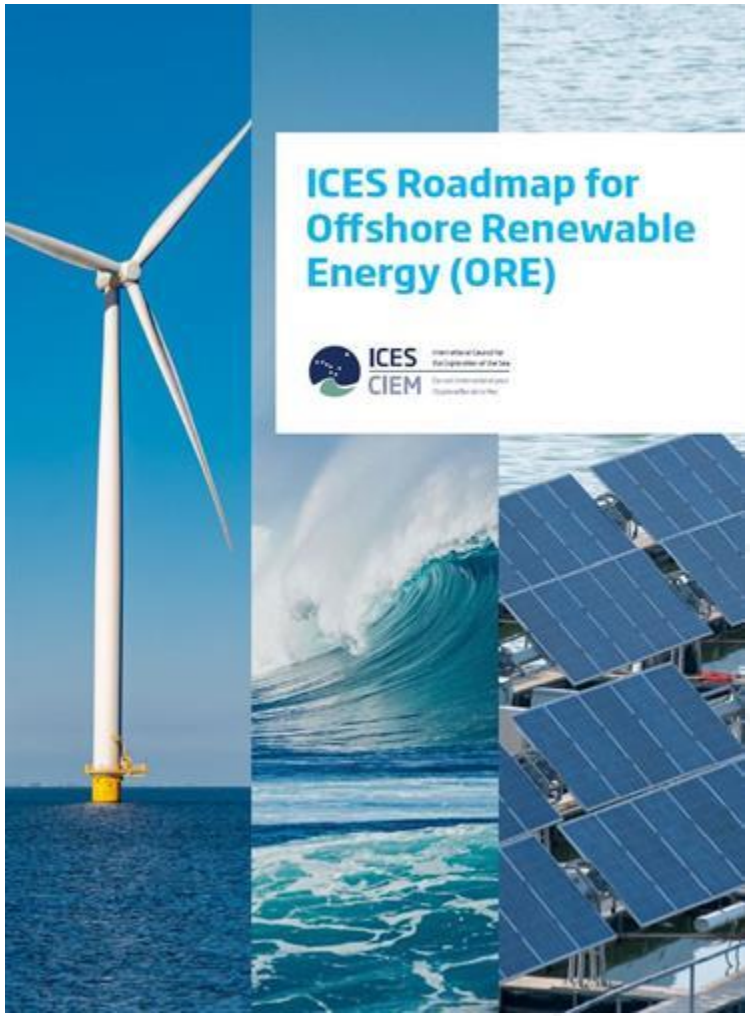
**11%** Revenue

**18%** Full-time employment

**Seabed litter** is widespread and increasing. The most common items are plastic sheets, synthetic ropes, monofilament fishing lines, and plastic bags.

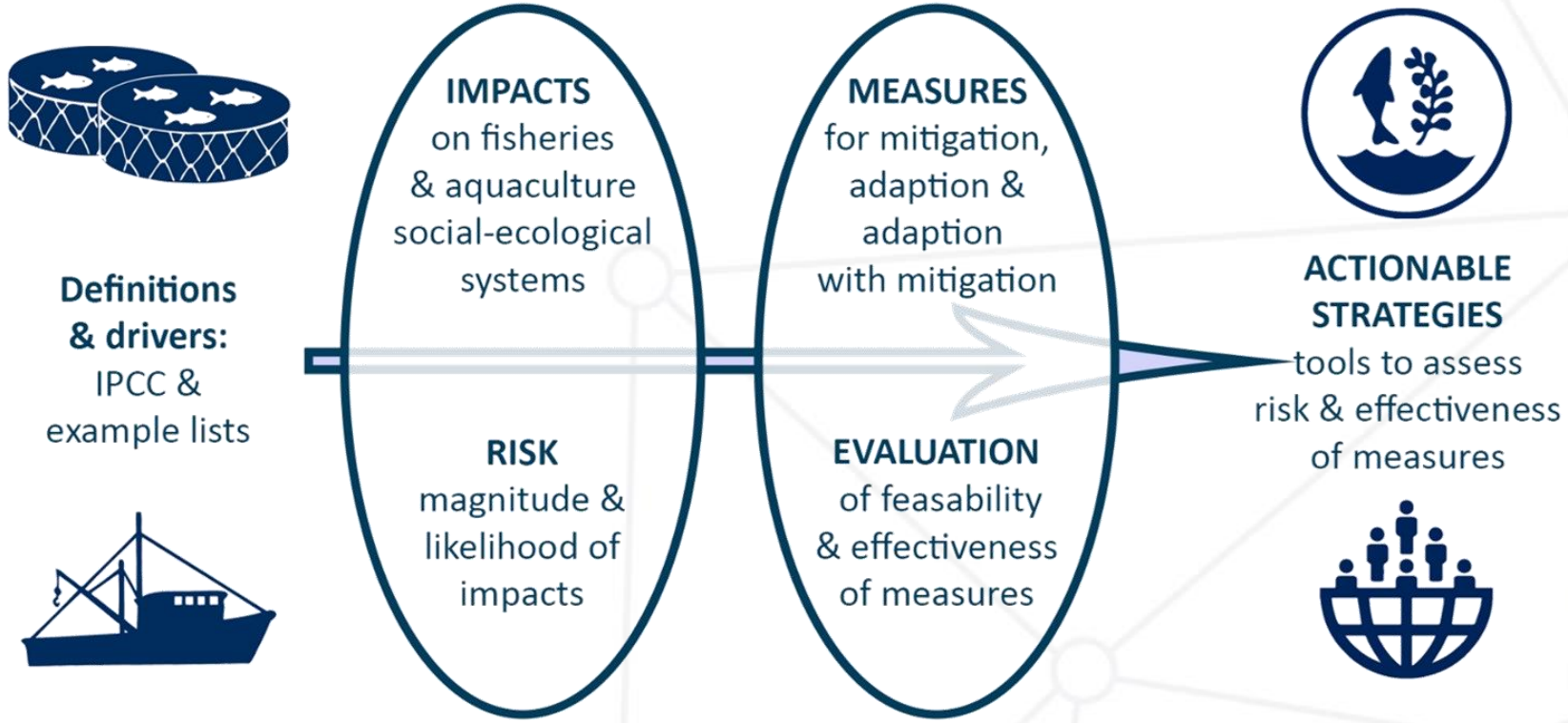
https://doi.org/10.17895/ices.advice.21731912

# ICES work is dynamically evolving with new scientific and management priorities




# Major challenge: Climate-informed advice

Constructing actionable strategies & approaches that are appropriate for advice to managers of fisheries.




https://www.ices.dk/community/groups/Pages/WKCLIMAD.aspx

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## Key experiences from my previous NOAA work

- Salmon bycatch reduction efforts
- Bering Sea Integrated Ecosystem Research Program
- Interspecies Quota Allocations

## Science to Policy Lessons

- Trust!
- Repeated exposure to new ideas
- Timing is everything – science has to be available to answer the questions we are asked.

# Thank you!

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