# A case study of Access Rights in Mixed Demersal Fisheries

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### Outline

• Introduction to ICES Working Group on Economics (WGECON)

- Case study for Denmark:
  - The Role of Economic Information and Analysis in the Design of Rights-Based Fishery Management Programs Prior and Following Implementation

# **ICES Working Group on Economics (WGECON)**

WGECON will continue in 2024-26 and is growing, but more is welcome!











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17+ countries; 60+ members - New members are welcome!

http://www.ices.dk/community/groups/Pages/WGECON.aspx

Science for sustainable seas



# WGECON

#### **Objective**:

 Promote the use of **fisheries economics** into ICES science and advice

#### **TOR for the working group:**

- Build capacity for economic science in ICES
- Identify data needs & priorities
- Demonstrate analytical methods & tools
- Assess & report economics of fisheries management
- Coordinate economic analysis for Ecosystem Based Fishery Management



# The future of economics in ICES

- Current work:
  - Contribution to ICES Ecosystem Overviews
  - Review Rights-based management in fisheries
  - Assessing interactions between fisheries & windfarms
  - Methods / tools for trade-off analysis
- Arrange conference sessions (ICES ASC 2023, IIFET 2024, MSEAS 2024, ICES ASC 2024) & collaborate with other ICES working groups

#### TWO REVIEWS COMPLETED

- Integrated ecological–economic fisheries models Evaluation, review and challenges for implementation
- Integrating economics into fisheries science and advice: progress, needs, and future opportunities

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# **Get in touch !**

# http://www.ices.dk/community/groups/Pages/WGECON.aspx

#### WGECON

#### Working Group on Economics

Affiliation: HAPISG

Chair: Arina Motova, Olivier Thebaud, J. Rasmus Nielsen

The Working Group on Economics (WGECON) addresses the challenge of bringing fisheries economics into ICES science and advice.

Nations are concerned about fish stocks and marine ecosystems, not least because they contribute to human wellbeing and have economic value. This economic dimension should be an integral part of the science and advice regarding the use and conservation of marine resources.



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Well-established and less established science and advice topics within ICES to which economics can contribute. Click on the image to enlarge.



# Review: Rights Based Fishery Management (RBFM)

### Review: Rights Based Fishery Management (RBFM)

Objective to identify the available economic data and models used at the time RBFM programs were developed

#### We look at:

- Biological and economic status pre-introduction of RBFM
- Initial objectives
- Initial program provisions [quality of access rights]
- Key controversies
- Available economic data (if any)
- Economic models used (if any)
- New economic data collection post-implementation
- Program changes [changes in access rights]
- Lessons learned

### Completed Case Studies (more case studies under development)

- Denmark demersal fishery ITQ
- Sweden demersal fishery IQ
- Iceland demersal fishery ITQ
- Denmark pelagic herring/mackerel/fish for reduction ITQ
- Spain pelagic anchovy/sardine ITQ
- Northwest US groundfish IFQ
- Northeast US groundfish sectors
- France producer organization cooperative management



# The Danish case of demersal mixed fisheries

### Pre-introduction of RBFM - The Danish regulatory system

• Overall – the Danish fisheries is managed by TAC's - set by the EU

#### **Before 2007** – Regulation included

- (1) Quota restrictions (species, areas)
- (2) Effort restrictions (days at sea, KwH-days)
- (3) Technical measures (Gear restrictions)
- (4) Capacity restrictions (Overall fleet tonnage and KwH)
- However, still a race to fish (yearly overall quotas)
- Even though, the fleet was reduced from 1995 to 2000, the economy continued to be hampered by the reduced TAC's leading to negative profitability in most fleet segments

#### **Biological status**

• Landing volume of the most important species - cod and plaice 1996-2021

Landing volumen Danish fisherse (Index 2007=1)



#### **Economic status**

• The numbers of vessels has been declining from 1995-2022



### The shift to ITQ's before 2007

- In 2001, a decision was taken by the Danish parliament to introduce ITQ's
- Aim was to establish a management system that provided for:
- Longer term economic viability and stability in the fishery
- **Reduce fleet capacity** and renew the fleet.
- Thus, ITQ's was introduce for the pelagic fleet in 2003 and 2004
- For the demersal fleet in 2007
- The ITQs were given to the fishermen free of charge (grandfathering)
- Demersal vessel was allocated a share based on their landings in the reference period 2003-2005

### The Danish regulatory system after 2007

#### **Initial program provisions**

- The ITQ system introduced allowed for free trading of quotas
- Limits on ownership for individual stocks (Pelagic 10% and Demersal 4%)
- Rights were given for 8 years, but is now extended to 16 years

#### **Key controversies**

• Distributional effects - Will small vessels and communities be the losers?

#### Available economic data and Economic models used

• Account data – Monetary gains estimated together with fleet reduction

#### Program changes

- A coastal fisheries scheme was established at the same time as ITQ was introduced.
- However, the small scale fishers could after 3 years leave this arrangement and sell the quota without any restrictions.
- Several program changes giving more fish to coastal fishers and closing this segment for trading outside the costal segment.

### lesson learned - introduction of strong user rights - advantages

- Decrease in overall capacity, (however, the vessels left are larger on average)
- Increase in TFP, (increase in landings per vessel capacity utilization)(Marine Policy, Nielsen et al. 2023)
- Improvement of the economics situation for the remaining fishers (Andersen et al. 2010 and Merayo et al. 2018)
- Thus, the main goal of the implementation of ITQs is reached



### Lesson learned - introduction of strong user rights - disadvantages

- ... But have also lead to concentration of fishing rights (quota-kings)
- Concentration of landings (5 harbours in Northern Jutland)
- If small scale fishers or certain areas should be protected more focus should be put on this before introducing ITQ's
- New/young fishers difficult to enter the fisheries
- Quotas sold to fishers/companies outside Denmark

# Key Dimensions of RBFM Program Access Rights

- The idea of the overall review is to compare all the mentioned fisheries
- Transferability
- Divisibility
- Duration
- Exclusivity
- Security

Scott (1999); Arnason (2000); Arnason (2005)

# Preliminary Evaluation Scores: Quota Share





# **Preliminary Evaluation Scores: Quota Use**







### Thank you

