Towards Healthy Stocks and Healthy Profits in Baltic Fisheries

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Overview

• Three terms
• Legal background
• Status of European and global Fish Stocks
• Towards healthy stocks
• Towards healthy profits
• Conclusions
Three Terms

• Biomass \( (B) \) is the weight of the fish in the sea

• \textbf{MSY} is the Maximum Sustainable Yield, and yield is the catch

• \( B_{msy} \) is the biomass that can produce the maximum sustainable catch
Legal Background

- The UN Convention on the Law of the Sea (UNCLOS 1982), Article 61(3), requires that coastal State fisheries management measures in the EEZ must aim at restoring and maintaining fish stock biomass that can produce maximum sustainable yields.

- The precautionary principle, as contained in the Treaty on the Functioning of the European Union, Article 191(2) and in UNFSA Article 6, demands that “States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.”

Text verified by Alexander Proelß, Prof. international Law, Triest
Status of European and Global Fish Stocks
Status of European Fish Stocks

**MSY:** Possible catch from healthy stocks

![Fish species illustrations](Image)

- **Saithe**
- **Cod**
- **Sprat**
- **Plaice**
- **Herring**
- **Sole**

**Actual and potential catch from 56 stocks in northern European waters**

*Fishdrawings: FAO*

*Landings from ICES 2010, MSY from Froese and Proelß 2010*
Average size of European fish stocks (bold blue line). The upper arrow indicates the path, if 75% of the stocks were to reach the Johannesburg target in 2015. The lower arrow shows the current trend.

Froese and Proelß *Fish & Fisheries* 2010
Status of Global Fisheries

Pauly and Froese, in prep.
Why Should Europe Care about Global Fisheries?

• 42% of the global trade in fish and fish products is imported by Europe

• A CFP reform that correctly implements the Law of the Sea, such as done by USA, NZ and AUS, will force others to follow

• A failed CFP reform will encourage continued overfishing, in Europe and globally

• US$ 1.2 billion European fish exports into the USA will be endangered
Towards Healthy Baltic Stocks
Biomass and Yield of Eastern Baltic Cod

![Graph showing the biomass and yield of Eastern Baltic Cod over time. The graph includes a red dotted line labeled "MSY" representing the Maximum Sustainable Yield, and a blue dotted line labeled "Bmsy" representing the biomass sustainability.](image)

Froese & Proelß *Fish & Fisheries* 2010
Biomass and Yield of Baltic Sprat
Biomass and Yield of Western Baltic Cod
Biomass and Yield of Central Baltic Herring

Biomass and Landings (1,000 t)

Year


Bmsy

MSY
Biomass and Yield of Western Baltic Herring
Towards Healthy Profits
Growth Overfishing is Stupid

North Sea Herring

- Weight (g)
- Age (years)

- Legal
- Mature
- Optimum

- 51 g
- 144 g

Diagram showing the growth of North Sea Herring, with weight increasing with age.
Killing Juveniles is Stupid

North Sea Cod

- **Weight (kg)**
  - 0.4 kg
  - 8.8 kg

- **Age (years)**
  - 0 to 10

Legend:
- Red: Legal
- Green: Mature
- Purple: Optimum

Graph showing the growth of North Sea Cod from age 0 to 10 years and their weight from 0.4 kg to 8.8 kg.
Letting Fish Grow is Smart

North Sea Plaice

Weight (g) vs. Age (years)

- Legal
- Mature
- Optimum

217 g at 3 years
776 g at 8 years
Cod, Eastern Baltic

SSB and Landings (1000 t)

Year


Froese & Proelß Fish & Fisheries 2010
Expected Profits under Three Scenarios

- Profits can increase 5-fold with proper management.
- Increase is fastest under proposed harvest control rules.

Froese and Quaas, submitted
Investing in the Resource is Smart

Economic return of setting the 2009 TAC to zero and resume fishing at $F_{mey}$ in 2010.

Quaas et al in prep.
Conclusions

• Baltic fish stocks are underperforming assets
• Investing in larger stock sizes leads to improved ecosystems status, healthy stocks, healthy fisheries and healthy profits
• With smart management, profits in the Eastern Cod fishery could rise 5-fold in 5 years
• If the incoming recruits in the Western Baltic herring are allowed to survive, they may rebuild that stock
Thank You

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