Capacity reducing measures in Norway

The case of the cod trawlers

John R. Isaksen & Bent Dreyer

Content

- History
- Biological and regulatory concerns
- How to measure fleet capacity?
- Governing fleet capacity
Capacity (structure?) in retrospect

• Former structure
  – 1946: 118 000 fishers, 31 000 vessels (max in 1960: 41 400)
  – 2015: 11 000 fishers, 5 900 vessels

• Political and historical paths
  – The self employed fisher, owning his vessel, important for coastal societies
  – High political legitimacy with retained value chain ‘advantages’
  – Status: Only active fishers are allowed to own fishing vessels
  – Open access (closing 1970’s–2000’s)

The Norwegian cod trawler fleet

• Prohibited by law in 1908
• 11 trawlers by onset of WWII
  – UK: 1 650; NL, GER, FRA: 200-450; SOV: 75 and ICE: 40
• Post WWII industrialisation
  – trawlers to supply the filleting industry
  – 1968-1974: 6-7 new licenses annually
• Over capacity;
• Quota-ceiling per vessel, and concentration rules
• Driving forces; biology, profitability and governance
Biological and regulatory concerns

Capacity adjustment
But how to measure capacity?

- Number of vessels is too narrow…
- Literature suggests a number of measurements:

  **Input based measures:**
  - Tonnage (GT)
  - Engine power
  - Days at sea
  - Investments

  **Output based measures:**
  - Catch per unit of effort (CPUE)
  - Capacity utilization (VIU)
  - Cost/revenues
  - Break even analysis

- We employed several measures
  …and more is to come…

Number of vessels (2002–2014)
Freezing, freshfish and fillet trawlers

Capacity development 2002–2014

- Vessel group:
  - # vessels: 86 → 36 (-58 %)
  - GT: 85’ → 71’ (-16 %)
  - kW: 214’ → 170’ (-20 %)

- Avg. vessel charact.:
  - 10m/3m longer/wider (58m/13m)
  - Double GT (2,000 GT)
  - Double engine power (3,500kW)
  - 3 yrs younger than in 2002 (15)

Vessel Capacity units: $VCU_i = l_i \times b_i \times 0.45 \times kW_i$
Examples

2014; 70m/16m, 3 441 GT, 6 400 kW

1972; 41m/9m, 585 GT, 1 815 kW

Technical or economic capacity

- Structuring (more quota per vessel) have increased profitability and improved the capacity utilization
Technical or economic capacity cont.

• Can there also be detected a “green effect”?

Future governance:
Balancing the aims and choosing the tools

Environmental sustainability
• Avoid overfishing
• Reduce TAC fluctuations
• Reduce CO₂-footprint

Economic sustainability
• Improve financial performance
• Implement new technology
• Avoid over-capacity

Social sustainability
• Improve social welfare
• Allocate TAC
• Taxation policy

Institutional sustainability:
Protect ecosystems, assets and society