
Capacity reducing measures in Norway

The case of the cod trawlers

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Content

- History
- Biological and regulatory concerns
- How to measure fleet capacity?
- Governing fleet capacity

Capacity (structure?) in retrospect

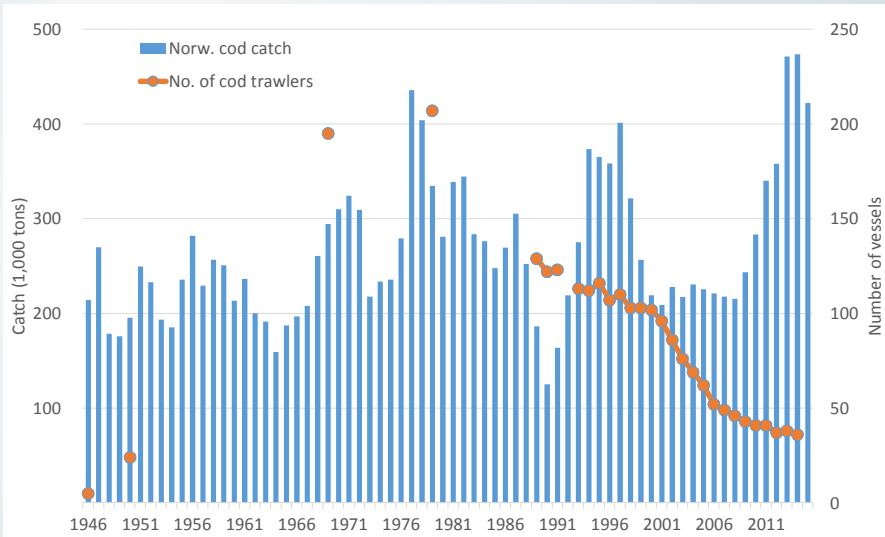
- Former structure
 - 1946: 118 000 fishers, 31 000 vessels (max in 1960: 41 400)
 - 2015: 11 000 fishers, 5 900 vessels
- Political and historical paths
 - The self employed fisher, owning his vessel, important for coastal societies
 - High political legitimacy with retained value chain ‘advantages’
 - 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;
 - Quotas from 1976, decommissioning support (1980-87), market based restructuring from 1984 (“unit quota”), 1990, 1997, 2005/7
- Quota-ceiling per vessel, and concentration rules
- Driving forces; biology, profitability and governance

Biological and regulatory concerns



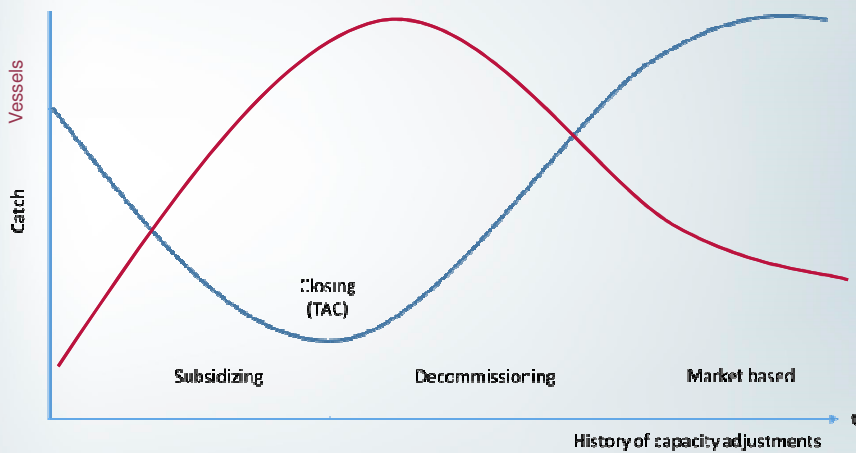
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Capacity adjustment



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But how to measure capacity?

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

Input based measures:

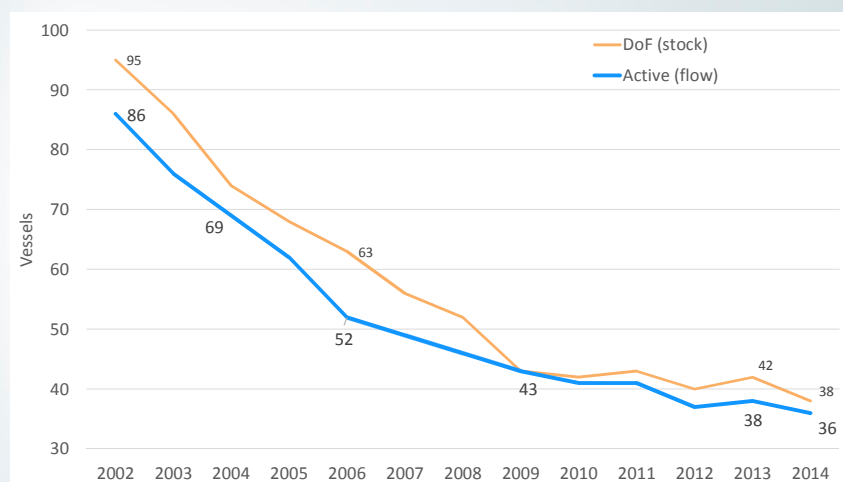
- Tonnage (GT)
- Engine power
- Days at sea
- Investments

Output based measures:

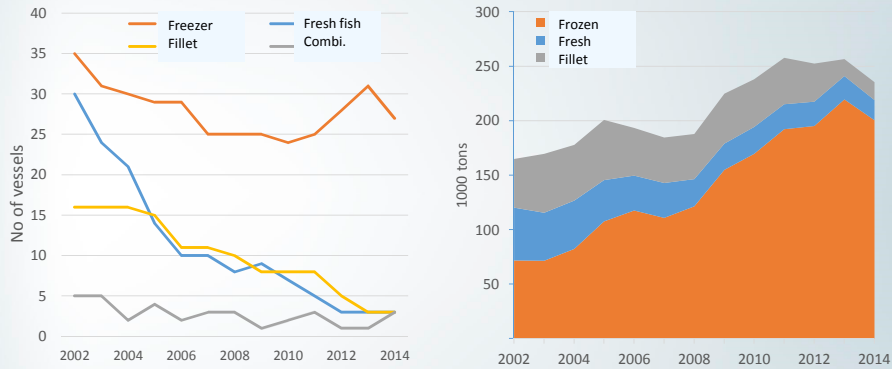
- Catch per unit of effort (CPUE)
- Capacity utilization (VIU)
- Cost/revenues
- Break even analysis

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

Number of vessels (2002–2014)



Freezing, freshfish and fillet trawlers



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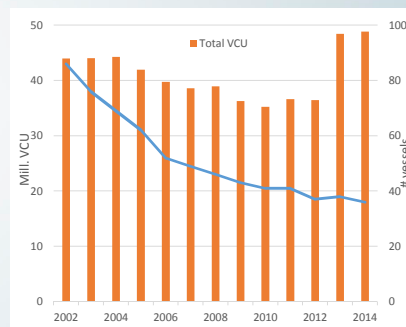


Capacity development 2002–2014

- 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:

$$VCU_i = l_i \times b_i \times 0.45 \times kW_i$$



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Examples

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



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

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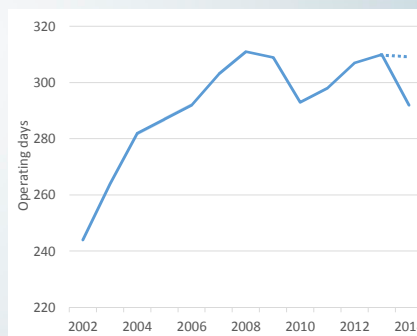
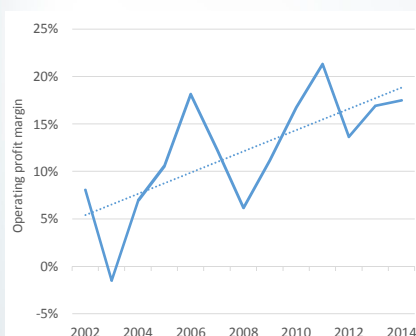
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11



Technical or economic capacity

- Structuring (more quota per vessel) have increased profitability and improved the capacity utilization



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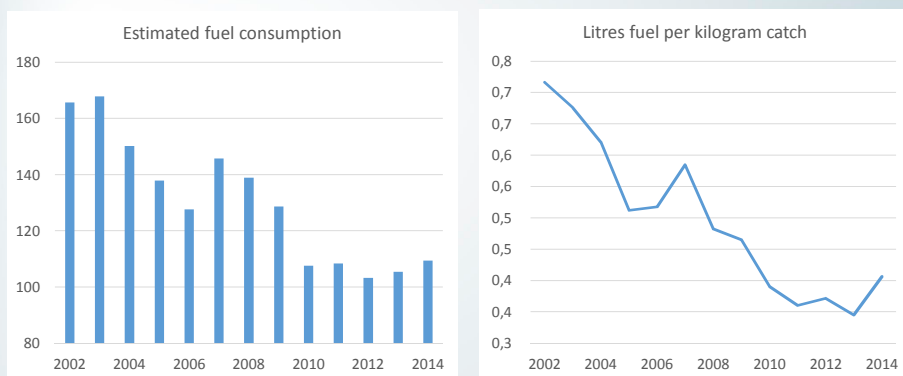
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12



Technical or economic capacity cont.

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



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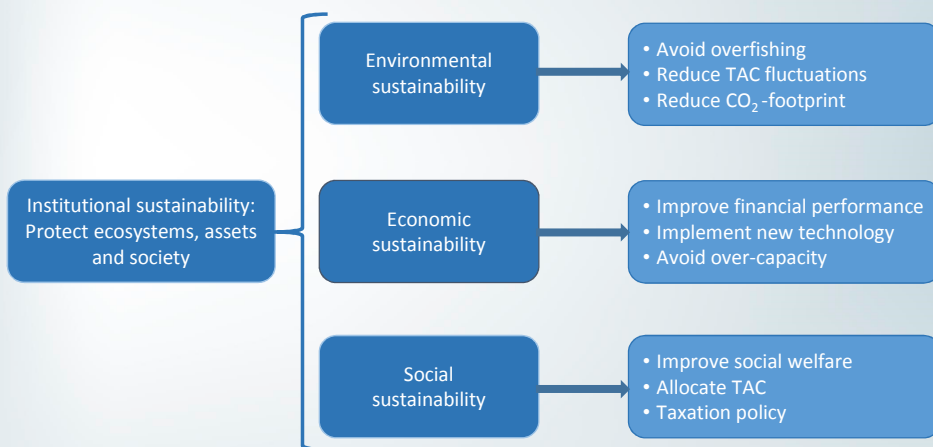
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13



Future governance:

Balancing the aims and choosing the tools



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14

