

NATURAL RESOURCES AND DEVELOPMENT

FISHERIES MANAGEMENT AND THE
CHALLENGE OF RESOURCE SUSTAINABILITY

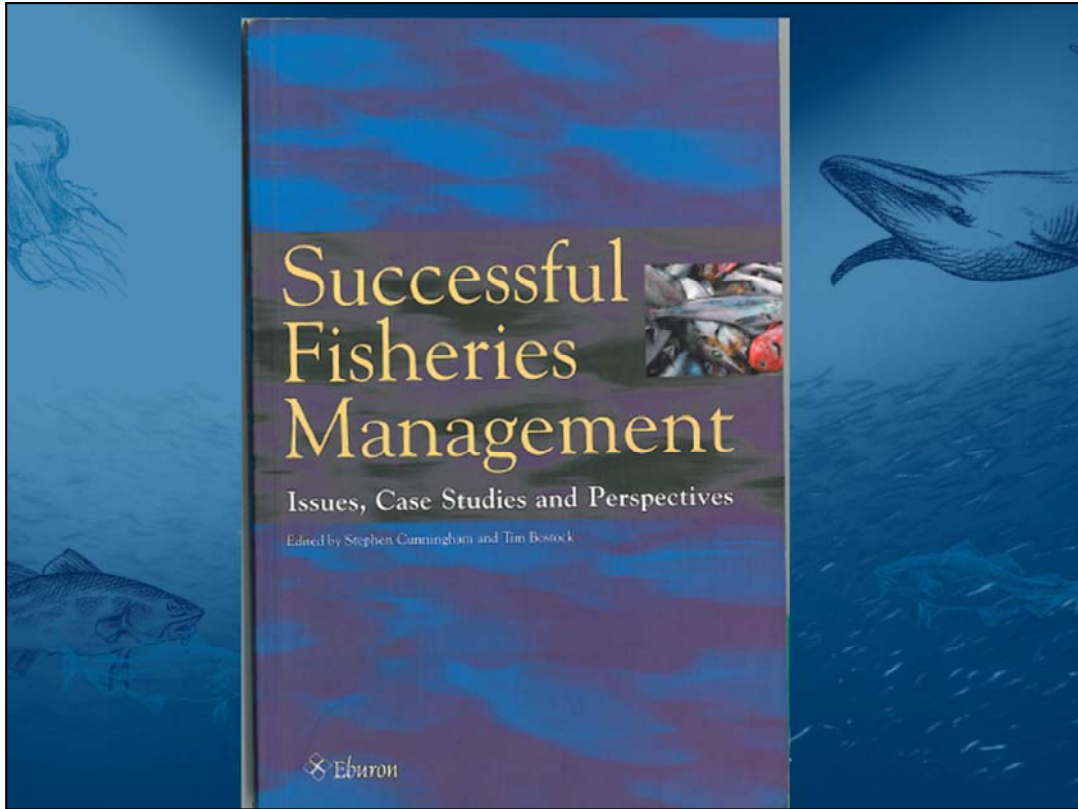


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Lidvard Grønnevet

NORAD
Oslo, 12 April 2011



Successful Fisheries Management -- has a least three dimensions:

- Biological – meeting sustainable use and protection objectives
- Economic – wealth and efficiency objectives
- Social – meeting equity objectives , both in terms of distribution and access

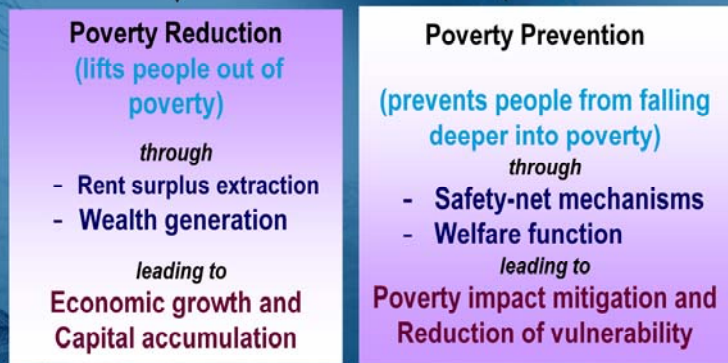
Require institutional capacity both:

- to define an appropriate balance between these parameters within management objectives;
- to implement and adapt these responsively over time

FISHERY POLICY MUST BE COUNTRY SPECIFIC

- The fishery policy to be implemented must be in coherence with the development level of the country.
- This issue is illustrated in the figure by Béné (2007).

Contribution of SSF to rural development



Restricted Access

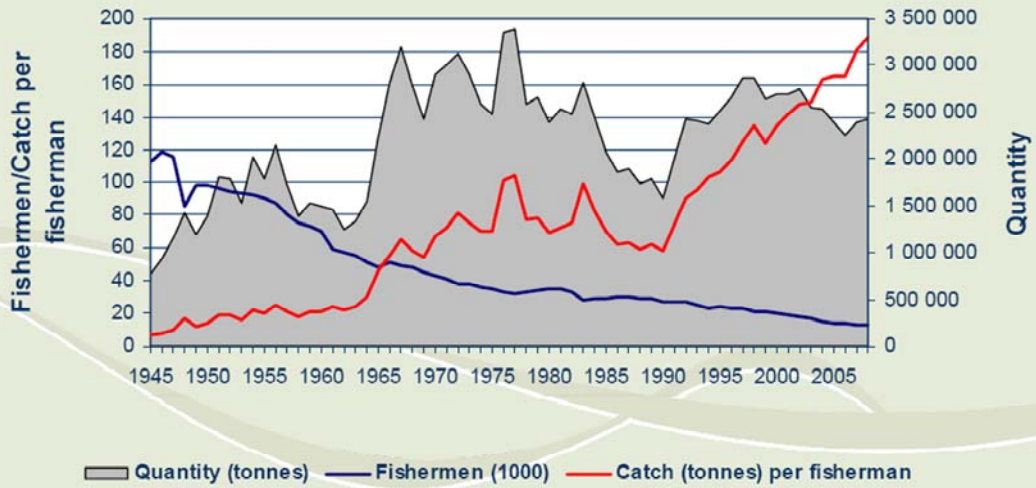
Common pool / Open Access



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Béné 2007

Norwegian catches versus fishermen 1945 - 2008



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FISHERIES DEVELOPMENT; 1900-present

- 1900-1945: Fishing capacity less than net production from fish stocks; little/no overfishing.
- 1945-75: Increased fishing capacity, overfishing and depletion of stocks.
- 1975-present: Gradual development of sustainable fisheries management, rebuilding of stocks – towards sustainable fisheries – and increasing public awareness and number of NGO's with a "save the oceans agenda".



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SUSTAINABLE FISHERIES

- **Norway: among world leading countries in fisheries and sustainable fisheries management.**
- **But: WE HAVE LEARNED IT THE HARD WAY – FROM SERIOUS MISTAKES WITH OVERFISHING AND STOCK DEPLETION in the 1960-70ies – to gradual rebuilding of stocks and fisheries.**
- **To-day: most major stocks rebuilt to sustainable levels, but still several stocks to recover**



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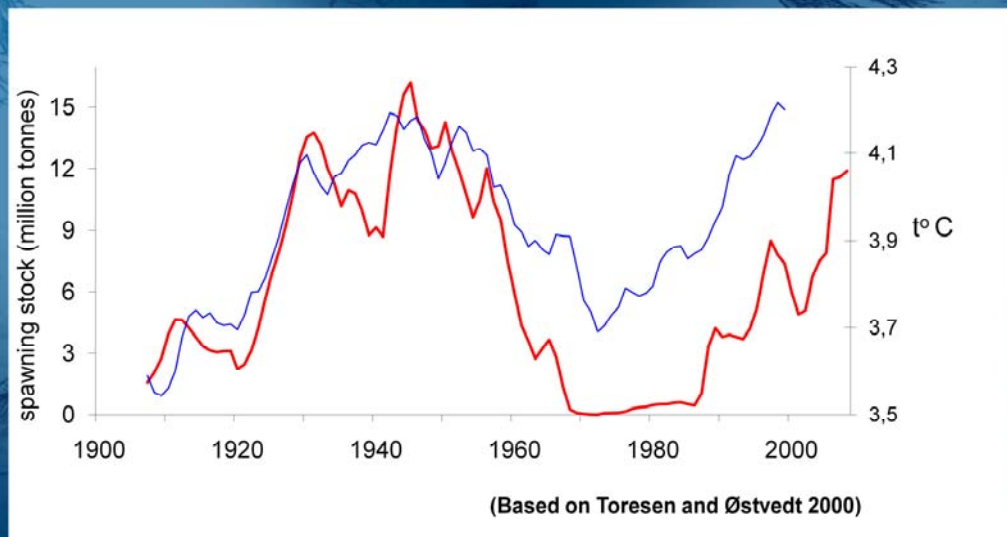
**From depletion to
Sustainable fisheries
management:**

**”The fall and rise ” of
the Norwegian spring
spawning herring – a
major example of stock
depletion and
rebuilding**



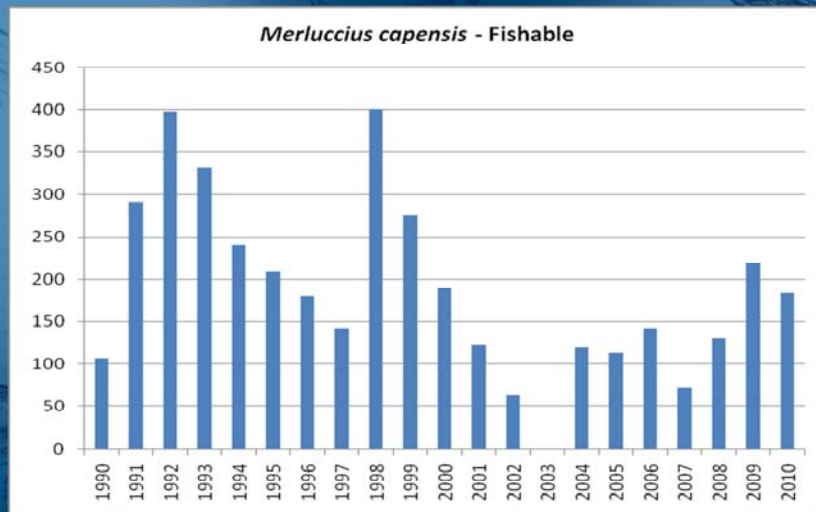
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Depletion of the largest fish stock in the N. Atlantic (NSS-Herring) in the 1960-ies: an eye opener and point of departure for development of sustainable fisheries management

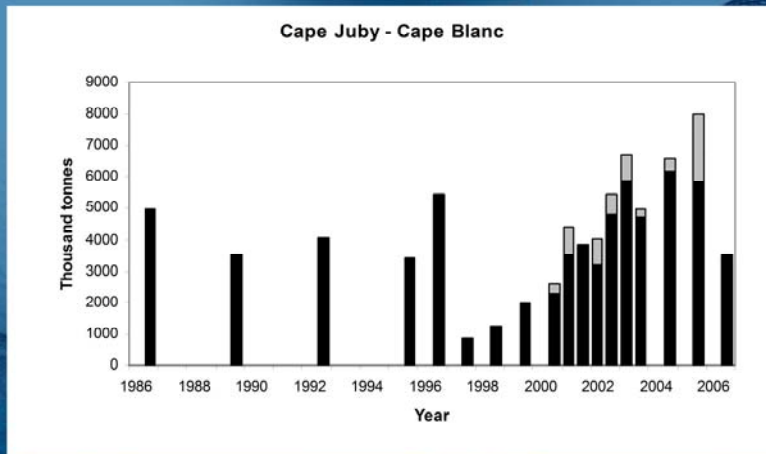


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Fishable hake in Namibia 1990 - 2010



Sardine 1983-2006



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FAO: The State of World Fisheries and Aquaculture 2010 (SOFIA)

- Present (2008) catch: NW- Atlantic: 2 mill tons, NE-Atlantic: 8,6 mill tons
- EXPECTED TREND:
- Further development of sustainable fisheries management – leading to:
- Stability of catches at present level (11 mill t.) – with potential for increase with the recovery of still overfished stocks (N. Cod and others)



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Mega trends in fisheries and the SUSTAINABILITY concept:

- However, expected stability and possible increase in N.Atlantic catches – also depends on the development of the Sustainability concept and limits to acceptable ecosystem effects (“footprints”) caused by fisheries.
- Hence; mega trends in fisheries also depend on the “tug of war” between different stakeholders over the sustainability concept and the limits to acceptable footprints made by the fisheries and aquaculture.



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CONFLICTING AGENDAS on ocean governance and sustainability:

- A) Conservation for use: seafood from sustainable harvest of living marine resources vs.
- B) Conservation for protection – eventually with little or no room – even for sustainable fisheries – with some stakeholders constantly misinterpreting facts and spreading false information
- **SOME EXAMPLES:**



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COMMON HEADLINES/ FALSE MESSAGES TO THE PUBLIC:

- "Most fish stocks are depleted or overfished"
- "Fisheries management has failed"
- "Marine protected areas is the only solution"
- "All commercial fish stocks will be gone in 2048"
- "Most large pelagic stocks depleted in the 1980-ies"
- etc



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Different interpretations of the FAO/SOFIA-report:

- GLOBAL STATUS OF FISH STOCKS:
- 15% underexploited or moderately exploited
- 53% fully exploited
- 32% overexploited, depleted or recovering
- **From a fisheries management perspective:
68% of world fisheries are sustainable**
- **From a NGO perspective: 85% of world
fisheries in crisis/ not sustainable**

Seafood WATCH (MBARI)

BEST CHOICES

Arctic Char (farmed)
 Barramundi (US farmed)
 Catfish (US farmed)
 Clams (farmed)
 Cod: Pacific (Alaska longline)*
 Crab: Dungeness, Stone
 Halibut: Pacific*
 Lobster: Spiny (US)
 Mussels (farmed)
 Oysters (farmed)
 Pollock (Alaska wild)*
 Salmon (Alaska wild)*
 Scallops: Bay (farmed)
 Striped Bass (farmed or wild*)
 Sturgeon, Caviar (farmed)
 Tilapia (US farmed)
 Trout: Rainbow (farmed)
 Tuna: Albacore (US*, British Columbia troll/pole)
 Tuna: Skipjack (troll/pole)

GOOD ALTERNATIVES

Basa, Swai (farmed)
 Clams (wild)
 Cod: Pacific (trawled)
 Crab: Blue*, King (US), Snow
 Crab: Imitation/Surimi
 Flounders, Soles (Pacific)
 Herring: Atlantic/Sardines
 Lobster: American/Maine
 Mahi mahi/Dolphinfish (US)
 Oysters (wild)*
 Scallops: Sea
 Shrimp (US farmed or wild)
 Squid
 Swordfish (US longline)*
 Tuna: Bigeye, Yellowfin (troll/pole)
 Tuna: canned light, canned white/Albacore*

AVOID

Chilean Seabass/Toothfish*
 Cod: Atlantic
 Crab: King (imported)
 Flounders, Soles (Atlantic)
 Groupers*
 Halibut: Atlantic
 Lobster: Spiny (Caribbean imported)
 Mahi mahi/Dolphinfish (imported)
 Marlin: Blue*, Striped*
 Monkfish
 Orange Roughy*
 Rockfish (Pacific)
 Salmon (farmed, including Atlantic)*
 Sharks*
 Shrimp (imported farmed or wild)
 Snapper: Red
 Sturgeon*, Caviar (imported wild)
 Swordfish (imported)*
 Tuna: Albacore, Bigeye, Yellowfin (longline)*
 Tuna: Bluefin*

Support Ocean-Friendly Seafood

Best Choices are abundant, well-managed and caught or farmed in environmentally friendly ways.

Good Alternatives are an option, but there are concerns with how they're caught or farmed—or with the health of their habitat due to other human impacts.

Avoid for now as these items are caught or farmed in ways that harm other marine life or the environment.

Key

* Limit consumption due to concerns about mercury or other contaminants. Visit www.edf.org/seafood

+ Some or all of this fishery is certified as sustainable to the Marine Stewardship Council standard. Visit www.msc.org

Seafood may appear in more than one column.



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The UNEP Large Marine Ecosystem Report
A Perspective on Changing Conditions in LMEs of the World's Regional Seas

2009

The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world's Regional Seas.

UNEP Regional Seas Report and Studies No. 182. United Nations Environment Programme. Nairobi, Kenya.

LINK:
http://www.lme.noaa.gov/index.php?option=com_content&view=article&id=178:unep-lme-report&catid=39:reports&Itemid=62

Download the full UNEP LME Report. 872 pages, 100Mb.

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Large Marine Ecosystems of the World and Linked Watersheds

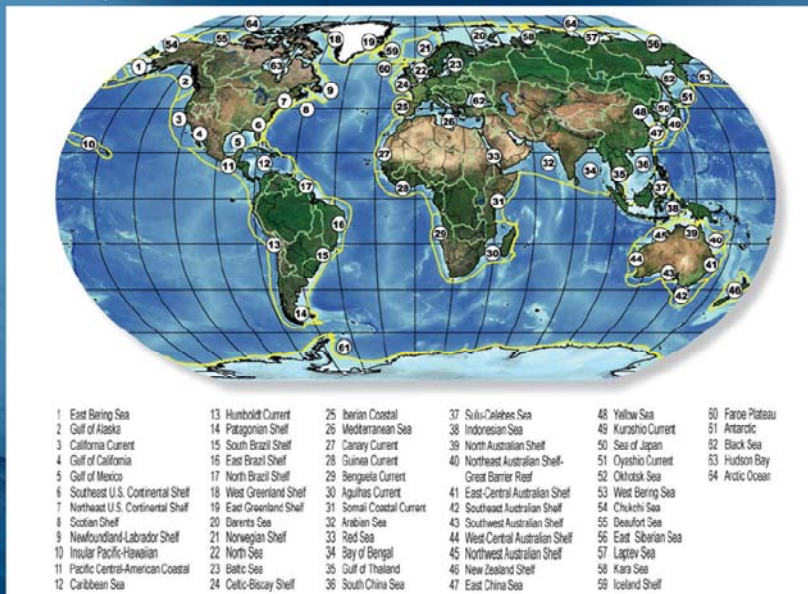
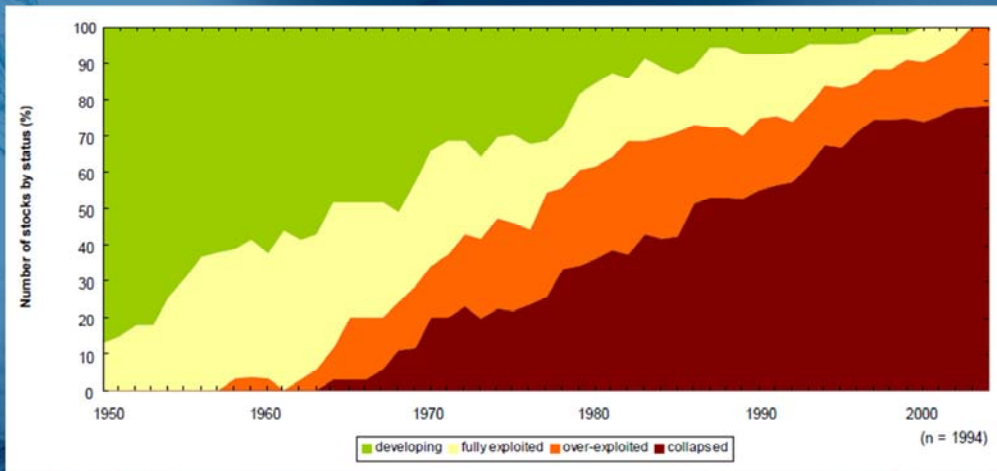


Figure 10B. Map of the 64 Large Marine Ecosystems of the world and their linked watersheds (Sherman et al. 2004).

THE UNEP LARGE MARINE ECOSYSTEMS REPORT
XIII North East Atlantic. 36. Barents Sea LME



The Stock-Catch Status Plots indicate that the number of collapsed stocks has been rapidly increasing, to about 80% of the commercially exploited stocks, with the remainder classed as overexploited (Figure XIII-36.8, top).

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Figure XIII-36.8. Stock-Catch Status Plots for the Barents Sea LME, showing the proportion of developing (green), fully exploited (yellow), overexploited (orange) and collapsed (purple) fisheries by number of stocks (top) and by catch biomass (bottom) from 1950 to 2004. Note that (n), the number of 'stocks', i.e., individual landings time series, only include taxonomic entities at species, genus or family level, i.e., higher and pooled groups have been excluded (see Pauly *et al*, *this vol. for definitions*).

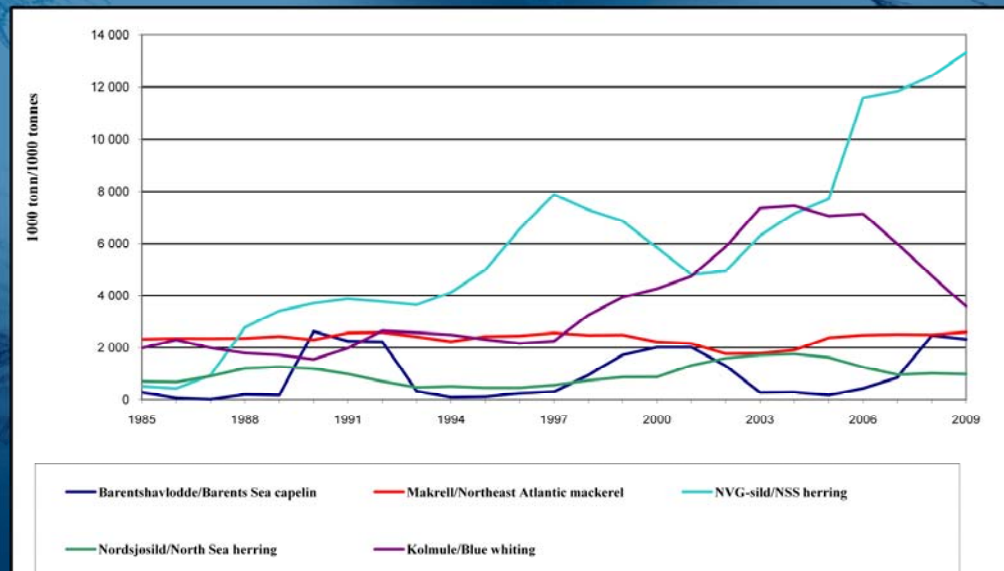
This report may be cited as:

Sherman, K. and Hempel, G. (Editors) 2009. The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world's Regional Seas. UNEP Regional Seas. Report and Studies No. 182. United Nations Environment Programme. Nairobi, Kenya. 2nd printing

TRUE OR FALSE MESSAGE?

- Let's have a look at the development of some major NE-Atlantic stocks and fisheries during the period of building sustainable fisheries management systems (1985+)

Spawning stock development of important pelagic species 1985 – 2009 (1000 tonnes)



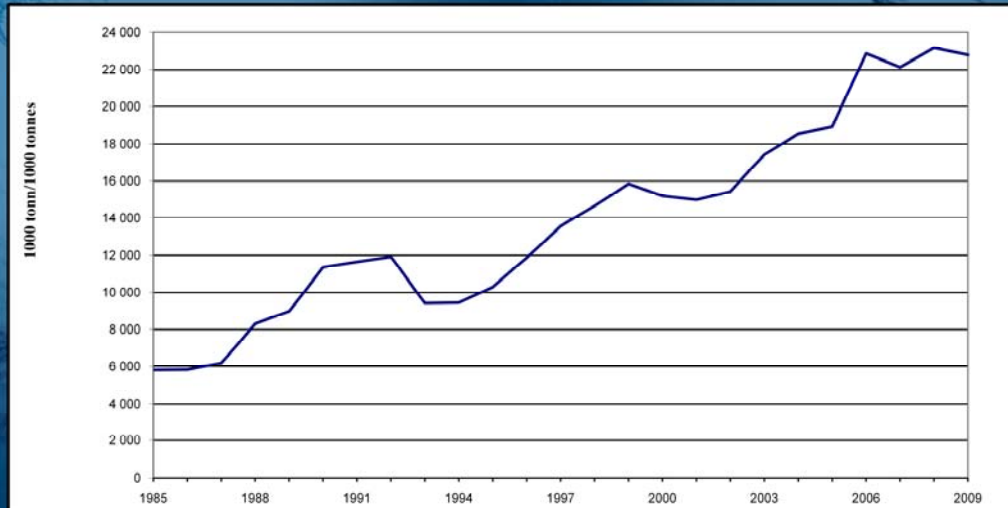
5 economic most important pelagic stocks. We see.....

Shared stocks – Norwegian shares

Value per kilo (mackerel –capelin)

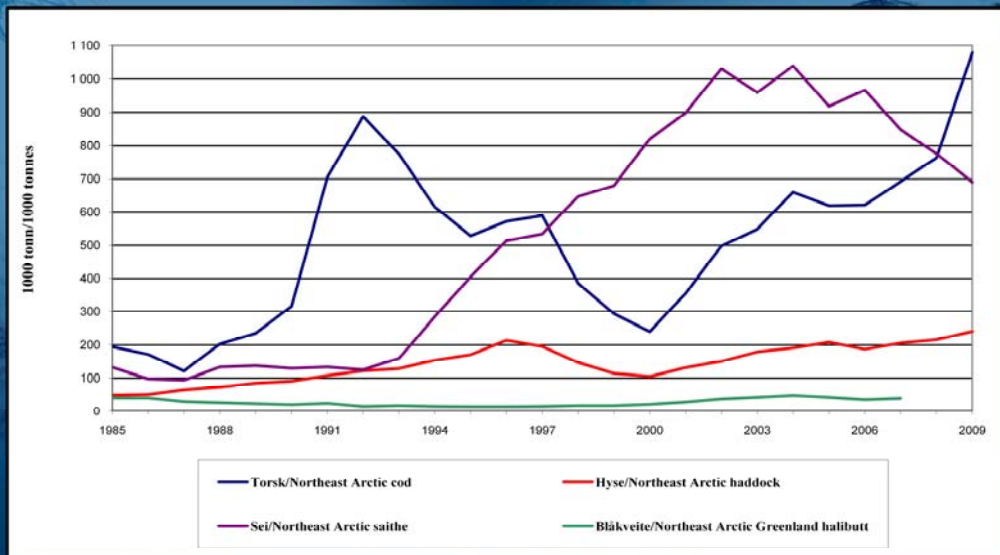
Indicators of wealth – future income opportunities – sustainability - and biodiversity. Most of these stocks are f.ex. important prey species and in this regard important for the well being of their respective ecosystems.

Aggregated spawning stock development of important pelagic species 1985 – 2009 (1000 tonnes)

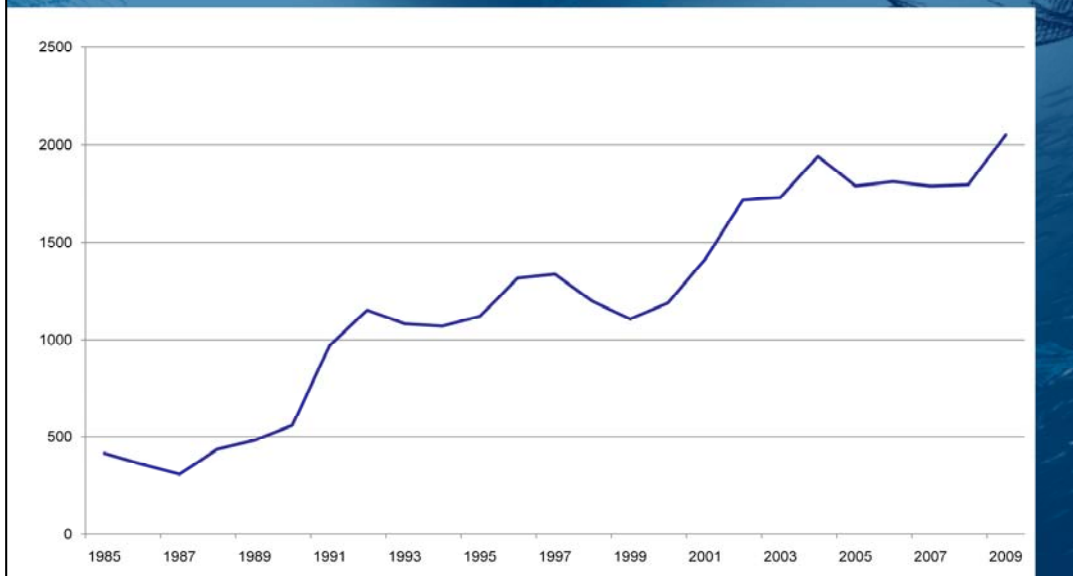


3 - nearly 4 times increase in the last 25 years

Spawning stock development of important groundfish species The Barents and Norwegian Sea 1985 – 2009 (1000 tonnes)

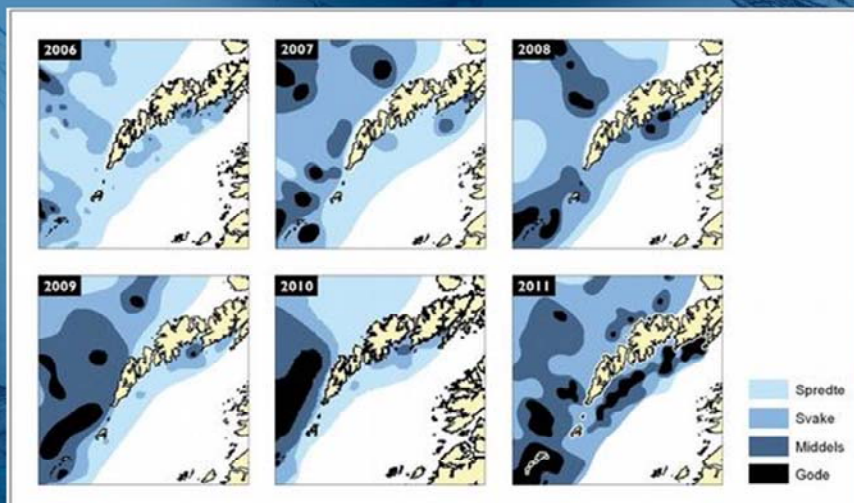


Aggregated spawning stock development of important groundfish species in The Barents- and Norwegian Seas
1985 – 2009 (1000 tonnes)



More than a 6 times increase since the bottom in the late 1980ies.

”SKREI” in Lofoten 2006 - 2011



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”Verdensrekord” i skrei

Det har aldri tidligere vært målt mer skrei enn under årets skreitokt. For første gang på flere år er det også registrert store mengder skrei øst i Lofoten.

Havforskningsinstituttets skreitokt starta onsdag 16. mars og blei avslutta søndag 3. april. De tetteste skreiforekomstene blei registrert på Røstbanken, på yttersida i området fra Røst til Moskenesøy, samt på innersida av Lofoten i området Lofotodden-Svolvær.

Største noensinne

Havforsker og toktleder Erik Berg sier at årets skreiregistreringer er de største som noensinne har vært. – Snakker vi om ”verdensrekord” i skrei? – Vi har iallfall gjort akustiske målinger som viser torsk i så store mengder som vi aldri har sett tidligere, sier Berg.

1,5 millioner tonn

– På bankområdene er utbredelsen av skrei i hovedsak lik observasjonene fra de siste 4 – 5 årene, men spredt over et noe større område i både sør og vest, forteller Berg. Det internasjonale rådet for havforskning (Ices) har beregna at gytebestanden av skrei er på omtrent 1,5 millioner tonn. Det er en økning på 30 prosent fra i fjor. – Det kan hende at årets tokt viser at den er enda større, men det får vi ikke svar på før vi har gått gjennom alt tallmaterialet vårt, sier Berg.

Seks- og sjuåringer

Det er torsk på seks og sju år (2004 og 2005-årsklassene) som dominerer i hele området, og det er mest av 2004-årsklassen. – Jeg må få presisere at dette er foreløpige beregninger, sier Berg.

Resultatene fra skreitoktet slås sammen med målingene fra vintertoktet. Deretter blir de en del av beregningsgrunnlaget i den årlige bestandsberegningen i regi av Ices.

TRUE OR FALSE MESSAGE?

- After strong criticism of the poor quality of the LME-report – UNEP decided to withdraw the whole report (fall- 2010).
- BUT: In an IUCN-report (2011): ” In the case of the **Barents Sea LME, there is a decreasing biomass trend attributed** to the over-exploited condition of many fish stocks inhabiting the LME”. (IUCN, UNDP, NOAA, Moore Foundation, 248 pp).
- So – the disinformation campaign continues – even against sustainably managed fisheries

CONCLUSIONS

- Fisheries: picture is not black nor white
- Sustainable fisheries management works
- Several major fish stocks are rebuilt and harvested sustainably
- Still many stocks to be rebuilt
- Expected stability and slight increase of catches in the North Atlantic
- Stronger effort needed to correct false messages about fisheries – and in the development of the sustainability concept (by marine research institutions, ICES, NEAFC, NAFO.....).



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*"I'm not sure what I am, but I believe
I'm a product of Norway."*

