Effective Collaboration Between Scientists, Managers and Policy Makers

Submitted by: World Bank
Effective collaboration between scientists, managers and policy makers

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NORWAY AS EXAMPLE

• Positive development
• EBFM and EBM partly implemented
• General Principles / Lessons Learned
Fishing Industry in Norway. Fundamental changes over the last decades

- Resource depletion
- Unprofitable
- Subsidized
- Sustainable resources. Main fish stocks fully productive.
- Profitable. Both public and private sector.
- No subsidies *

(* except ....)

WHY ?

- The rest of this presentation
- The negative example of the two most important fish stocks:
  - Northeast Arctic cod
  - Norwegian spring-spawning herring
HOW?

- Evolution – not Revolution

- EFFECTIVE Collaboration between scientists, managers, policy makers and stakeholders

“50 % of the problems in the world results from people using the same words with different meaning .... The other 50 % come from people using different words with the same meaning.”

Kaplan 1997 (from Hersoug 2005; “Closing the Commons”)
Transitions:

- 1956 - Saltwater Fisheries Act
- 1983 - New Salt Water Fisheries Act
  In force from August 1, 1984
- 2007 - Marine Resources Act
  In force from January 1, 2009
Fisheries agencies and institutions

Ministry of Fisheries and Coastal Affairs

The Fishery and Aquaculture Industry Research Fund
NIFES
Institute of Marine Research
National Coastal Administration
Directorate of Fisheries
Norwegian Food Safety Authority
National Veterinary Institute
The Guarantee Fund for Fishermen
Innovation Norway
The Research Council of Norway
Fiskerforskning
The Norwegian Seafood Export Council
SECORA AS

1 The National Institute of Nutrition and Seafood Research
2 Affiliated institution
3 Affiliated institution

Institute of Marine Research

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THE BARENTS SEA ECOSYSTEM PROGRAMME
THE NORWEGIAN SEA ECOSYSTEM PROGRAMME
THE NORTH SEA ECOSYSTEM PROGRAMME
THE COASTAL ZONE ECOSYSTEM PROGRAMME
AQUACULTURE PROGRAMME
CLIMATE - FISH PROGRAMME
OIL - FISH PROGRAMME
ECOSYSTEMS AND POPULATIONS DYNAMICS PROGRAMME
BIOLOGICAL MECHANISMS PROGRAMME
MAREANO PROGRAMME
Internal organisation chart of The Royal Ministry of Fisheries and Coastal Affairs

The Regulatory Chain
The number of vessels by length groups. 1980-2008.
Spawning stock biomass of all main pelagic species.
1985-2007

Catch (tonnes) of all pelagic species. 1985-2008.
Value of catch (in 2008-values) of all pelagic species.
1985-2008. 1000 NOK.


Deflated fish price index 1945-2006

First-hand sales value adjusted to the consumer price index

1945=100

Estimated total operating revenues and costs (nominal value).
Vessels 8 metres and above. (operating whole year)
Estimated total operating margin (percent)

\[ = \frac{\text{operating result}}{\text{operating revenues}} \times 100. \]


Effects; Remuneration to Fishers

Based on index wage, average prices, total catch and number of fishermen
Subsidies; Percentage of Catch Value

For the period 1980-2004 governmental support is due to the agreement between Norwegian Fisherman’s Association and the Ministry of Fisheries.
Norwegian spring-spawning herring

Spawning Stock Biomass

![Graph showing Spawning Stock Biomass from 1950 to 2000]

Norwegian spring-spawning herring

Landings

![Graph showing Landings from 1950 to 2000]

The population of Norwegian spring spawning Atlantic herring rose dramatically in parallel with the temperature but....

..the rapid decline and collapse by the end of the 1960s was due to a combination of poor environmental conditions and over fishing.

Northeast Arctic cod
Northeast Arctic cod

Figure 7.1: Consumption by Northeast Arctic cod in the period 1984-2004

Status report on the Barents Sea Ecosystem, 2004-2005
Capelin in the Barents Sea

Development of the total stock (dark + light area) and spawning stock (dark area) of capelin in the Barents Sea measured during autumn. Recruitment is measured as billions of one-year-olds during autumn.

Barents Sea capelin

Impacts of the environment on the fish stock

Capelin is an important part of the diet for many predators, including cod, harp seals, minke whales, humpback whales, and haddock. Capelin is the main prey item for cod. Growth, maturation, and cannibalism of cod are all affected by the capelin abundance. The estimated annual consumption of capelin by cod has varied between 0.2 and 3.0 million t over the period 1984–2007. Young herring consume capelin larvae, and this predation pressure is thought to be one of the reasons for the poor year classes of capelin in the periods 1984–1986, in 1992–1994, and in 2001–2005. The abundance of herring in the Barents Sea is expected to be at a low level in 2009. Low capelin abundance has also in some periods had a negative impact on harp seal and seabird populations. However, these effects were much stronger during the first capelin collapse (caused by the 1983 year class of herring) than during the two later collapses. After spawning, dead capelin may also be of importance as food for haddock and other benthic feeders.

ICES 2008
Management Objectives (1980)

• Conservation of resources
• Maintain settlement and activity along the coast
• Secure employment
• Diversified fleet structure and ownership

Conflicting goals

Challenges - Reform Process Drivers

• Structural problems
• Huge overcapacity and operating losses
• Large subsidies
• Depleted resources – herring / cod crises
• Initiatives from the pelagic fleet
• Public debate
Management Objectives (present)

• Sustainability and conservation

• Profitability and efficiency

• Maintain settlement and activity along the coast

• Diversified fleet structure and ownership

Conflicting goals

Key Policy and Reform Components

• Stability and predictability; long-term allocation

• TACs, limited access, and individual vessel quotas

• Reduction/elimination of the subsidies

• Involvement of stakeholders

• Knowledge-based and gradual approach
Results

- Sustainable harvest
- Fewer vessels, fewer fishermen
- Improved profitability
- Quota utilization
- Diversified fleet structure
- Geographical concentration

Lessons Learned

- Fewer vessels and fishers are inevitable
- Subsidies delay required reform
- General economic growth can smooth the path
- Stakeholder involvement is crucial
- Incremental process reduces opposition
- Timing, pace and sequencing are essential
- Clear distribution of benefits and integrated compensation secure support
Overall Compliance with The Code of Conduct

Bar chart showing status of compliance of the 53 top fishing countries with the FAO (UN) Code of Conduct for Responsible Fisheries (CCRF). Error bars are derived from Monte Carlo runs of the MDS ordination technique on the upper and lower score limits for each question and country (see Annex 5). Broken lines: green denotes ‘good’ compliance rating; red denotes ‘fail’ rating.

"Oil interest" statement
(Teknisk Ukeblad, April -09):

"Marine / Fisheries biologists are saboteurs."

Background:
MRI’s advice to not open important spawning grounds for oil activites.
Thank you

www.worldbank.org/fish