Ecosystem-based fisheries management in Iceland
Some practical considerations

Jóhann Sigurjónsson
Marine Research Institute, Reykjavik, Iceland

Open-ended Informal Consultative Process on Oceans and the Law of the Sea,
"Ecosystem approaches and oceans", Session 3: "Lessons learned .... developed States"
New York, 12-15 June 2006

CONTENT OF PRESENTATION

- Perspectives from a fishing nation
  - modern fishing industry
  - economy highly dependent on well managed marine resources and marine environment
- The overall aims of EBFM- Confusion about the concept ?
- Some examples from Iceland
- Pragmatic steps to move forward
THE EBFM IN ESSENCE

- To manage human activities in such a way
  - that we determine the course and have in advance predicted the consequences for the resource in question, related resources and environment
- To weigh values of different resources one against another and to determine on such basis management actions

THE EBFM CONCEPT

  - Integrated management of multiple fisheries and other ocean uses - holistic approach
  - Broader set of conservation objectives, both ecosystem and species
- Continue single-species approach, but stronger measures needed - if successful, we move towards EBFM
THE EBFM CONCEPT

- Efforts to scientifically define holistic approaches, ICES and other fora
  - Good progress, but complicated to determine objectives, criteria and indicators
  - Still at design stage

THE EBFM: A PRAGMATIC VIEW

- Single species approach - try to further improve with present tools
- Main management measures
  - TAC’s
  - Selective mesh size and gear
  - Season length and timing
  - Multispecies interactions
  - Closed areas

  • All essential elements and in the spirit of EBFM
OCEAN CURRENTS / TOPOGRAPHY
PROVIDE A RELATIVELY CLOSED SYSTEM

CLOSED AREAS: BOTTOM TRAWL
CLOSED AREAS: LONG-LINING

MULTISPECIES STOCK SYSTEM AND MANAGEMENT
SINGLE SPECIES EBFM INVENTORY

1. Assessment/Basis for advice
2. Effects of fishery:
   - Discards of target and non-target spp by gear and area
   - Physical environment by area
   - Ecosystem components by species/stock complexes
3. Multispecies considerations
4. Effects of environmental changes on target stock
5. Special management considerations

2. Effects of fishery
   A. Discards of target spp by gear and area
      • Estimation available
        • Apparent low or high impact
      • Monitored regularly
        • Apparent low or high impact
      • No data
        • Potentially relevant factor or
        • Not considered relevant factor
   B. Discards of non-target spp by gear and area
   C. Indirect mortality of target and non-target spp
      • (e.g. escapees through mesh, off hooks or under gear)
2. Effects of fishery on

D. Ecosystem components by species/stock complexes/communities

- Benthos
- Zooplankton
- Birds
- Marine mammals
- Fish

- Presence/absence of specific studies-information available?
- Apparent low or high impact

2. Effects of fishery/fishing gear

E. Physical environment by area and gear

- Fish habitats
  - Spawning grounds (cod, capelin, sandeel)
  - Nursery grounds (cod, haddock, redfish)
- Benthic habitats
  - Cold water corals/benthic life structures (benthic animals, redfish)
  - Other three-dimensional habitats

Seabed maps available?

Effects estimated?

What measures are in place?
3. Multispecies considerations
- Food web data available?
- Models developed?
- Predictions made?

4. Effects of environmental changes on target stock
- If changes occur, does it require special attention with respect to spp in question?

5. Special management considerations
- Operational
- Ecological

CONCLUSION

- Ecosystem-Based Fisheries Management
  - Secures growth and sustainability of the fish stocks and their environment – at least in the long-term
  - Secures biodiversity
  - Requires knowledge/understanding, much more commitment and research than at present– profitable though in the long-run
- Important to continue developing EBFM methodology, objectives, criterias and indicators
CONCLUSION

- Until such time
- Single-species EBFM Inventory (and single-species management) provides
  - Pragmatic approach to move forward
  - Integrates the concept into the institutional culture
  - Supports incremental development towards EBFM