What exactly is MSE?

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What is MSE?

- Robust to uncertainty
- Plausible uncertainty

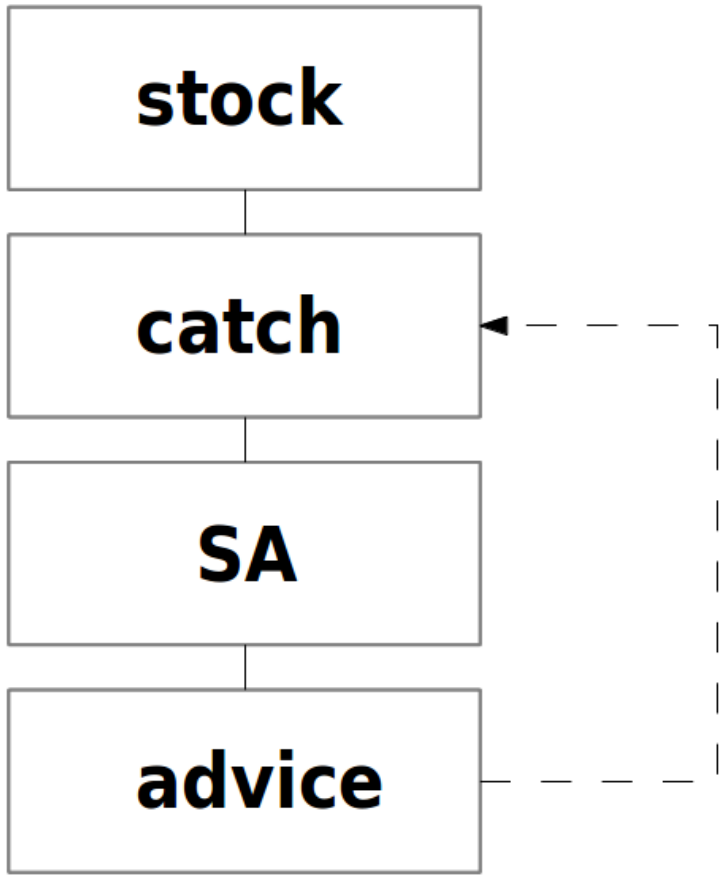
Definitions

- Risk
- Uncertainty
- Simulation

A brief history of MSE

- IWC NMP (1976): B, K, MSY
- IWC MPA

SA-based SC advice



SA-based SC advice

Problems

- SA uncertain or wrong
- Inter-annual changes in SA
- Short time horizon
- Management objectives unclear
- Stakeholder distance

Feedback control

- Lag in management in RFMO using SA

Decision rules

- Agree rules of game before start playing
- Data + Decision rule + Management
- EXAMPLES

Testing decision rules under uncertainty

The 6 STEPS

1. Specify & prioritize objectives
2. Quantify them as performance measures
3. Develop a set of OMs
   - Condition on data
4. Identify candidate MPs (SA + HCR)
5. Simulate the future
   - Generate data
   - Determine management action
   - Apply to fleet and stock
6. Summarize performance of MPs
7. Select best MP

Advantages

- Less haggling for short term benefits
- Evaluation of risk
- Limits catch variability
- Consistent with PA
- Interaction among scientists, managers & stakeholders
- Default management if no agreement
- Robust performance over tracking noise in data

Disadvantages

- Lengthy complex development (but less and less so)
- Overly rigid
- Autopiloting?
- Poor data, poor models
- Choosing scenarios, test cases

Limitations

Trade Offs

MSE at IOTC

- Current status
- Future work

Prediction is very difficult, specially if it is about the future – Niels Bohr