Joint Stakeholder Satisfaction in Fisheries Management

Dorothy J. Dankel (Institute of Marine Research, Norway; University of Bergen, Norway)
Mikko Heino (University of Bergen, Norway; Institute of Marine Research, Norway; Evolution & Ecology Program, IIASA)
Ulf Dieckmann (Evolution & Ecology Program, IIASA)

Issue
Marine fisheries have biological, social, & economic components, & stakeholders have different preferences for different parts of this system.

Problem
Most of the world’s major fish stocks are managed based on biological assessments only. These assessments are unable to tackle social and economic components of the fishery.

So what?
Management failures could come from over-emphasizing biological assessments at the expense of social and economic assessments. Decision-makers lacking quantitative tools to understand the trade-offs among stakeholder preferences may misinterpret what the fishery system can provide for stakeholders.

Our solution
Our framework, calibrated for capelin (results illustrated) and cod in the Barents Sea integrates the stakeholder eyes’ view by quantifying the joint stakeholder satisfaction (JSS) profile by calculating the generalized mean.

Why use the generalized mean? To connect our quantitative assessment to humanistic ideas of democracy à la John Rawls’ idea of maximum utility to the least advantaged.

Benefits of quantifying the joint stakeholder satisfaction (JSS)
Stakeholder conflicts may not be so conflicting as thought! Quantification of stakeholder preferences leads to clarification of management consequences and room for an “integrated solution.”

Acknowledgements
This project was initiated at IIASA’s Young Scientists Summer Program. The authors acknowledge a grant from the European Marie Curie Research Training Network FishACE (Fisheries-induced Adaptive Changes in Exploited Stocks). D.D. recognizes the Norwegian Research Council for grants from the HAVKYST program (10131-01) and ADMAR program (200497/330). M.H. additionally acknowledges funding from the Bergen Research Foundation. M.H. and U.D. acknowledge funding by the European Commission, through the Specific Targeted Research Project FinE (Fisheries-induced Evolution). U.D. acknowledges funding by the European Science Foundation, the Austrian Science Fund, the Austrian Ministry of Science and Research, and the Vienna Science and Technology Fund.