

Theme Session P

External independent peer reviewing – achievements and failures

ICES CM 2007/P:01

Is a rigorous and fair referee's evaluation of a papers or a grant application ever achievable?

Paul J. B. Hart

Part of the routine of academic life is to be asked to referee papers submitted to journals or grant applications to funding agencies. I will outline the pressures under which a referee operates when performing these two tasks. In both cases, it is assumed that the referee is an expert on the material being assessed. This is more likely to be the case for a paper but being an expert does not guarantee that a paper is properly evaluated. Pressure of work often means that referees take short cuts and this can mean that contentious statements in manuscripts, apparently supported by references to the literature are not as secure as they seem. Examples of this will be given from the literature dealing with fish welfare. With research grants the pressure on funding agencies to find large numbers of referees often means that people are chosen who are less expert than is desirable. It is maintained that any competent scientist can assess the merits of a grant proposal by evaluating the logic of the proposal and the soundness of the experimental design. Examples will be given where this is not the case. A further pressure on referees of grant proposals is that the funding agency receives more proposals than it can fund so it has to find ways to reject scientifically sound proposals. This pressure leads to rejection for reasons other than scientific excellence. I will conclude with suggestions as to how these problems can be ameliorated.

Keywords: Referee, paper, grant proposal, journal, funding agency.

Contact author: Paul J B Hart, Department of Biology, University of Leicester, Leicester LE1 7RH, UK [tel: +44 116 2523348, fax: +44 116 252 3330, e-mail: pbh@le.ac.uk].

ICES CM 2007/P:02

The DFO Experience with Inclusive Advisory Processes

Jake Rice

In 1996 the Department of Fisheries and Oceans Canada re-instituted a national coordination office for ensuring peer review and provision of science advice on fisheries issues. When Canada's Oceans Act and the Species-at-Risk Act were passed in the late 1990s, the mandate for coordination of peer review and provision of advice was extended to cover the science support for these pieces of legislation, and all other substantive peer review and advisory needs of the policy and management sectors of the Department.

From the outset the Canadian Science Advisory Secretariat and the regional offices were instructed to ensure that "experiential knowledge" was brought into the body of information used in assessments and advice, which required fishermen to participate actively in the assessment process. When the federal government approved the Principles and Guidelines for Science Advice for Government Effectiveness, the standards for engagement were raised. To ensure inclusiveness of all types of information and knowledge, and transparency of review and advisory processes, the Principles and Guidelines required full participation in the entire process by individuals from groups whose lives would be directly affected by the scientific advice.

CSAS and the regional offices have tried a number of different approaches to meeting these standards for inclusiveness and transparency. Some have failed badly, some have usually succeeded, and many have a patchy performance record. Over time we have developed guidance for "best practice" in making our review and advisory processes inclusive and transparent, without sacrificing scientific quality or independent. The presentation will review these "best practices" and lessons learned from the Canadian experience.

Keywords: science advice, peer review, Canada, traditional knowledge.

Contact author: Dr. Jake Rice, Director, Canadian Science Advisory Secretariat, Department of Fisheries and Oceans, 200 Kent Street, Ottawa, Canada [tel: 1-613-990-0288, fax: 1-613-990-2467, e-mail: ricej@dfo-mpo.gc.ca].

ICES CM 2007/P:03

An analysis of the reviews and reviewer profiles of the Center of Independent Experts

David J. Die, M. Shivlani, S. K. Brown, and D. Sampson.

The Center for Independent Experts (CIE) was created to provide independent and timely peer review of the science conducted by the National Marine Fisheries Service (NMFS) in the United States. Of the more than

one hundred reviews conducted by the CIE from its inception in 1999 to the present, the majority of the reviews have pertained to stock assessments; however, many other topics, ranging from endangered species' population ecology to fishery economics, have also been covered. The process of selecting reviewers consists of matching the skills required for the review, with the ability of suitable experts subject to constraints set up to avoid picking candidates with potential conflicts of interest. The database of reviews conducted by the CIE over the last eight years and its associated list of experts was analyzed to determine whether experts chosen by the CIE were of the quality demanded by NMFS. Standard metrics used by academia and NMFS to evaluate promotion were used to determine quality. The population of CIE Experts was then compared with that of a random sample of authors obtained from the Aquatic and Sciences and Fisheries Abstracts and with that of the authors of NMFS products reviewed by the CIE.

Keywords: peer review, fishery management, stock assessment.

Contact author: David J. Die: RSMAS University of Miami, 4600 Rickenbacker C. Miami FL 33149 USA [tel: 1-205 421 4607, fax: 1 305 421 4221 e-mail: ddie@rsmas.miami.edu]

ICES CM 2007/P:04

Reviewing and producing the ICES Fisheries Advice: the power of a few?

Mark Dickey-Collas and Frans van Beek

ICES fisheries advice is produced by a relatively small group of experts. Many of the members of ACFM are involved in the advisory process from collecting data, contributing to assessments, reviewing reports to formulating the advice. This provides huge strengths to the advice, in that the general system is understood. However, due to the many roles played by these experts, the advice can be influenced throughout the process by a select few. Some of these experts are also members of external committees which play a role later in the advisory process, thus their influence continues outside ICES.

Fresh objective review then becomes a problem, and the provision of space for new ideas also becomes limited. The demand for experts from ICES and the EU is also too great compared to the available pool, thus an expert's availability becomes the main criteria for whether they are chosen to provide or review advice. The culture of debate and the dominance of English are also contributory factors to the reduction of the size of the pool of influential experts. All of these factors impact on the quality of advice and the review process. In this paper we document and comment on the tendency for the fisheries advice process to become dependent on a small number of individuals that are influential throughout the system.

Contact author: Mark Dickey-Collas, Wageningen IMARES, P.O. Box 68, 1970 AB IJmuiden, the Netherlands, [e-mail: mark.dickeycollas@wur.nl].

ICES CM 2007/P:05

Peer review and competitive selection of marine RTD proposals for public funding in Spain: views from management and user sides

Antonio Bode

Scientific excellence and potential societal benefits are key elements in most research and technological development (RTD) programs. Marine research in Spain, largely supported by public funds, showed a paradigmatic rapid development in the last decades. The establishment of the Marine Science and Technology Program (CYTMAR) in 1995, the growth of the oceanographic fleet and Marine Science Colleges at several universities were instrumental in this process. In addition, most Regional Councils in coastal regions also initiated their own Marine RTD programs. Selection of a growing number of proposals, most of them of multidisciplinary nature, is achieved by careful screening and review. At national level the selection process is made in two steps, one for peer-review on proposals on a one-by-one basis, and a second strategic review where proposals were ranked according to their contribution to specific program objectives. Independent expert review in step one is organized through the National Agency for Evaluation and Prospective (ANEP), while the strategic ranking is made by experts convened by the funding agency. Members of both agencies participate in the committee for final selection of proposals for funding. This process is generally simplified to one independent evaluation step in case of Regional Council programs. Among the benefits of the selection process for the funding agency are the independence of external reviews, and the balance between specialist and generalist experts. The two step evaluation also minimized the risk for conflicts of interest of reviewers in the proposals. Disadvantages of the process, for both funding agencies and researchers, are the long delays between project calls and final selection, and potential underestimation of multidisciplinary proposals.

Keywords: marine research, peer review, science management, Spain.

Contact author: Antonio Bode: Instituto Español de Oceanografía. Centro Oceanográfico de A Coruña. Apdo. 130. 15080 A Coruña. Spain. [tel: +34 981 205362, fax: +34 981 229077, e-mail: antonio.bode@co.ieo.es].

ICES CM 2007/P:06

The “lottery” of “independent” peer review: experiences and perspectives

Andrew I. L. Payne

Peer review of scientific research is generally believed to be a valuable adjunct that enhances the value of science. However, whether one seeks peer review of literature or of scientific output itself, it has been likened to somewhat of a lottery. From a literature (i.e. scientific paper) perspective, the stance taken by an editor is perhaps more crucial than that of the reviewers, at least in ensuring fairness and independence. However, at the interface between science and management, it has become increasingly obvious that decision-makers rely more and more upon rigorous peer-review of their science-based advisory documents and also expect the underpinning science itself to have been subjected to rigorous peer review. In this context, if conducted openly and set against prior stipulated and agreed terms of reference, peer review certainly adds value to the process of advice provision, and makes it difficult for decision-makers to ignore well-founded recommendations. However, other (non-natural science) inputs do still require politically expedient decisions to be taken, sometimes to the frustration of the authors of the natural scientific advice. Based on experience of reviews in several parts of the world, contentious issues in the peer-review process that arise include: the competence of the peer-reviewer(s); their independence; the ability of a review chair to steer proceedings amicably and without interference by those commissioning the review; the means whereby reviewers are invited; the cost of the review and whether payment jeopardizes its independence; personnel continuity from one review of a resource or topic to the next; and the international respect for the experts conducting the review process. These and other issues are addressed while forcefully advocating the continuation of a rigorous process of peer review.

Andrew I. L. Payne, CEFAS, Science Directorate, Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK [e-mail: andy.payne@cefas.co.uk].

ICES CM 2007/P:07

The peer review process: perspectives and insights from a journal editor

Howard I. Browman

Ever-increasing numbers of manuscripts, grant proposals, working group documents, position papers, etc. are being circulated - to an overburdened community of non-remunerated experts - for critical evaluation. Expert reviewers are fatigued. Their efforts, and particularly the amount of time required to prepare complete, well-considered and constructive critiques, are unrecognized by administrators. As a result, the peer review process is in danger of collapse. More and more colleagues are no longer able or willing to accept review assignments. I will discuss these, and related issues, from my perspective as Associate Editor-in-Chief of Marine Ecology Progress Series (MEPS). In 2007, MEPS, L&O, CJFAS and the ICES JMS will receive > 3000 manuscripts for evaluation. At least 2000 of these will be distributed for review, and some of them will be resubmitted and reviewed again. This will require approximately 10000 reviews. With current rates of rejection, at least 1500 of these manuscripts will likely be resubmitted to other journals, which will solicit perhaps 3000 – 4000 more reviews. Some of those will be rejected, and resubmitted elsewhere. Thus, manuscripts initially submitted to only 4 marine science journals could easily require more than 15000 reviews. And how many qualified experts are there out there anyways?! These numbers, and the level of non-remunerated time and effort that they represent, are meant to be sobering and will hopefully serve as the basis for an animated discussion.

Keywords: peer review; quality control; inherent bias; reviewer fatigue.

Contact author: Howard I. Browman: Institute of Marine Research, Austevoll Research Station, N-5392 Storebø, Norway [tel: +4798860778, fax: +4756307527, e-mail: howard.browman@imr.no].

ICES CM 2007/P:08

The Center for Independent Experts - the U.S. National Marine Fisheries Service's National Peer-Review Program

Stephen K. Brown, Manoj Shivilani, David J. Die, and David Sampson

The U.S. National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) instituted the Center for Independent Experts (CIE) in 1998 as a national peer-review program. Operations of the CIE, run under a contract with the University of Miami, maintain the independence of the reviewers, and follow strict conflict of interest guidelines. The review process meets the requirements of the Data Quality Act, which covers regulatory, rather than academic, peer reviews (e.g., reviewer identities are published). The CIE consists of a coordination team, responsible for day-to-day activities, such as identifying reviewers and handling logistics, and a steering committee, which provides oversight and approval. The CIE also provides

administrative support. The NMFS initiates reviews through formal requests to the CIE, coordinates development of the Terms of Reference, and has final approval authority for review reports. This approval is based only on compliance with the Terms of Reference, and cannot be based on report contents. In recent years the CIE has conducted over 15 reviews per year, the majority of which were on fish stock assessments. The recently re-authorized Magnuson-Stevens Act, which governs U.S. marine fisheries, contains a new requirement to set annual catch limits for approximately 530 stocks. This mandate will significantly impact the types and numbers of peer reviews of stock assessments, including reviews conducted by the CIE, as well as reviews that may be conducted by other entities.

Keywords: peer review, Center for Independent Experts, CIE, stock assessment, Data Quality Act, Magnuson-Stevens Act.

Contact author: Stephen K. Brown, Office of Science and Technology, NOAA National Marine Fisheries Service, F/ST4, 1315 East-West Highway, Silver Spring, Maryland 20910, USA [tel: +1 301 713 2363 x133, fax: +1 301 713-1875, e-mail: stephen.k.brown@noaa.gov].

ICES CM 2007/P:09

Public reviews of fisheries science by the North Sea Commission Fisheries Partnership: towards shared understandings and participatory science

M. A. Pastoors, A. D. Hawkins, and J. J. Maguire

The advisory system within ICES operates with a peer review system where scientists both internal and external to the advisory process are called upon to evaluate the quality of the assessment that provides the basis for the fisheries advice. The peer reviews are at present not open to public participation.

In the years 2000–2005 the North Sea Commission Fisheries Partnership (NSCFP) organized public reviews of some of the key stock assessments in the North Sea that had been carried out by the ICES Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK). Independent scientific experts were invited by the NSCFP to provide their reviews of the assessment in front of an audience that consisted of fishers (and their representatives), environmental NGO's and scientists.

The reviews operated in an open atmosphere and there were many discussions on the details of the methods, the data and the assumptions in modeling. We argue that the public character of the NSCFP review process acted as an efficient interaction forum where stakeholders and scientist could develop shared understandings about the contents of the scientific evaluations and the expert knowledge in the fisheries. The process also highlighted that there was a keen desire from stakeholders to contribute to the scientific process.

The NSCFP has been succeeded by the Regional Advisory Councils (RAC), which have been established for European regional seas. Because of that development, the relationships between science and stakeholders are currently being reshuffled. We argue that this offers opportunities for developing a more participatory mode of science for data collection, analysis and modeling and in providing transparent public reviews of the findings.

Contact author: Martin Pastoors, ICES, H.C. Andersens Blvd 44-46, 1553 Copenhagen K, Denmark [e-mail: martin@ices.dk].

ICES CM 2007/P:10 Poster

External peer review of survey series: Lessons learned from the Rügen Herring Larvae Survey

Christopher Zimmermann, Mark Dickey-Collas, Richard DM Nash, and Cornelius Hammer

ICES coordinated surveys are occasionally reviewed by parent expert groups. A potential problem is that these are often conducted by evaluators being themselves involved in the surveys, thus lacking independence. Compared to the cost of most surveys, the funds assigned to quality control is minimal, and external peer reviews rarely happen. In this paper, we describe our unanimously positive experience with the external peer review of the Rügen Herring Larvae Survey (RHLS). This national survey is conducted since 1977 and was increasingly reduced to the delivery of a recruitment index for the assessment of Western Baltic Spring Spawning herring, but the time series could never be used for the analytical assessment. Two external experts reviewed the time series during a week in late 2006, together with all institute's staff involved in the survey. The group was looking at the general survey design and methods used, results, and allocation of manpower for sampling and evaluation. The reviewers concluded that the survey is scientifically highly valuable, but that the focus should be moved from an assessment input towards early life history and ecosystem work. They recommended in detail how the sampling strategy could be amended, which assumptions relevant for the design should be tested, and how the scientific output could be increased. The institute spent roughly a tenth of the cost of the survey in a single year on this review week. Institute's staff motivation and public interest on the survey boosted after the review, which also increased the scientific productivity.

Keywords: independent survey review, quality control, cost efficiency, Rügen herring larvae survey, Western Baltic Spring Spawning herring.

Contact author: Christopher Zimmermann: Institut für Ostseefischerei, Bundesforschungsanstalt für Fischerei, Alter Hafen Süd 2, 18069 Rostock, Germany [tel: +49 381 81161 15, fax: +49 381 81161 99, e.mail: christopher.zimmermann@ior.bfa-fisch.de].