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An interview with Jean-Jacques Maguire

The new Chair of the Advisory Committee looks ahead

Jean-Jacques (JJ) Maguire (Canada) began his three-year term as Chair of the Advisory Committee (ACOM) in January 2011, replacing outgoing Chair Michael Sissenwine.

He is a familiar face in ICES, first as a member of the Working Group on Methods of Fish Stock Assessments (WGMG), then in the ICES Advisory Committee on Fisheries Management (ACFM) from 1989 to 1999, which he chaired from 1996 to 1999. Between 1996 and 2008, he was a member of the North Western Working Group as a member of the Faroese contingent. He is also a regular participant at ICES Annual Science Conference. JJ has extensive experience providing neutral scientific advice for fishery management in national and international scientific and management processes.



Jean-Jacques Maguire.

What do you hope to accomplish?

The ACOM members that I spoke with at the Annual Science Conference mentioned being overstretched. The ACOM process with associated expert groups has a very heavy workload. So, we are going to evaluate if we can streamline and simplify the process. Currently, advice is prepared in four steps: an expert working group does the initial technical analysis and writes the first draft of the advice; a review group verifies that the technical aspects of the work are correct; an advice drafting group provides a near-final draft of the advice; and finally, ACOM approves the advice. This is two more steps than under the previous ACME/ACFM processes as well as for most other scientific advisory processes I know about (ICCAT, NAFO, GFCM, IPHC, Canada, USA). One of the basic principles of quality assurance is that, whatever it is you are doing, try to do it right from the

beginning of the chain of production. In the late 1990s, when ICES was seeking ways to better ensure the quality of the advice, I thought that this meant that we should have fewer, not more, steps, so I think we will look at that.

Over the next few weeks, I will try to speak with as many ACOM members as possible, hopefully to all of them, to get their views on what works in the ACOM processes, what does not work, and how things could be improved.

In the previous incarnation of the advisory system, most expert groups had a peer review mandate, and I expect that members of EGs continue to perform this peer review function. So we need to evaluate if the review-group step in the current process is required, and one of the first steps in accomplishing that is to see how many "mistakes" have been found by the review groups. An alternative would be to remove the peer-review mandate of the Expert Groups. The point is that peer review should be done once, but it should be done well. And as indicated above, it is better to do it earlier in the process rather than later.

In the late 1990s, my view was that expert groups should be given more responsibilities in terms of drafting the advice. In a sense, this may be happening now because some members of the expert Groups also participate in the advice drafting group, but I am not sure this is the most efficient process. We need to evaluate how much value is added at each step of the current process.

I am not saying that we will remove one or more steps. I am saying that we need to evaluate if all of

the steps are necessary, if they add value, and if they are the most efficient way of doing business. The system has been in place for slightly more than three years, and there should be enough information to evaluate it. This will fit in well with the external review of the advisory process that is being planned.

Expert group members are really at the heart of ACOM's work. They are the engine that drives the whole process, but I am not sure that they realize how much we appreciate their work. I want to convey our gratitude to the EGs every time I have a chance to do it.

I have been a provider of scientific advice for more than 30 years, but I have also been a user of the advice, for example in the early 2000s when I was preparing the chapter for the Northeast Atlantic for the FAO Review of the State of the World Marine Fisheries. ICES advice for North Sea cod changed before the FAO review was published, and I felt obliged to revise the part dealing with that stock, but having revised for North Sea cod, I thought I should check the other stocks, expecting few changes. But there were more than I expected, sometimes very large changes, with few explanations of the reasons for the changes. Things have improved since then, but I will pay particular attention to ensuring that there is an explanation for why the perception of stock status changed.

Last October, Council noted that progress had been slow on the integration of advice and on the inclusion of ecosystem drivers in the fishery advice. I hope to move forwards on both fronts. The Baltic is probably the area where progress could be achieved rapidly on the integration of advice. I would also like to have a few pilot projects where ICES would provide social and economic in addition to its traditional biological advice. In the early 2000s, I was involved in a series of workshops organized by FAO on Factors of Unsustainability in Fisheries. These convinced me that the main factors of unsustainability are not linked to stock assessments and biological advice. They are linked to poor governance in fisheries, pernicious incentives, and social and economic factors.

Does the new organization seem strangely familiar?

the Exploration of the Sea

Actually, this set-up was proposed in the late 1990s as a result of a Bureau Working Group, followed by the Coordinating Group on ICES Advice (CGADV) led by Niels Axel Nielsen. Although the CGADV recommended that a single advisory process was necessary to provide integrated advice, it recognized that in practice it would be difficult to move immediately to a single advisory structure. At that point, ICES created the Advisory Committee on the Environment (ACE) to deal with the request for integrated advice and later the Management Committee on the Advisory Process (MCAP) to coordinate the whole thing.

It may have been necessary to go through these intermediate steps, but what counts is that, in the end, ICES instituted a single advisory committee. I think this is the way forward. Integration is not something that can be added at the end of the advisory process. Integration must start at the very first step of the process.

What are the biggest problems facing ICES Advice? Or what are your biggest challenges?

From a personal perspective, one of the biggest challenges will be to fill Mike Sissenwine's shoes. Mike was a member of the ICES Bureau for many years, he was First Vice-President, and then President, before becoming chair of ACOM. He therefore had a very good understanding of the strengths, weaknesses, opportunities, and threats that the ICES advisory system was facing. I have some catching up to do, but I'm getting there quickly.

From an internal ICES perspective, workload and quality assurance remain big issues, and the two are linked. As indicated above, workload is heavy and there are signs that the system may be overstretched. We hope that technology will help on both fronts by better integrating the various stages of the preparation of the advice and reducing manual interventions (e.g. copy and paste). Currently, the way that we produce advice offers too much scope for human error.

The cancellation in early March of WKFREQ (the Workshop on Frequency of Assessments and Updating Advice) is one more example that the advisory system is overstretched. Reducing the frequency of individual assessments is one possible way to reduce workload, but, ironically, the workshop had to be cancelled because of too few participants, and those who had expressed an interest lacked time to prepare analyses ahead of time.

Most of ICES advisory work depends on the involvement of scientists from national institutes. This has worked reasonably well up to now, but it could become unsustainable. ICES is offering itself as a provider of independent, neutral, quality-assured, peer-reviewed, integrated advice based on partial cost recovery. The cost recovery does not cover the salaries of national scientists involved in expert groups, and it may not cover their travel expenses either. Mike Sissenwine and others refer to this as an unsustainable business model. National scientists are involved in other scientific and advisory processes (e.g. STECF, RACs, HELCOM, OSPAR, NASCO, and NEAFC), some of which pay for their involvement or for their travel expenses. So there is some competition for the same workforce, and coordination will be needed.

Relationships with the users of ICES advice seem good, but I expect that there might be benefits to increasing the visibility of ICES work by informing users of the advice more proactively and the general public more regularly and frequently.

An interview with the General Secretary

Gerd Hubold talks about ICES Advice

The following interview appeared originally in the Spanish-language publication Industrias Pesqueras, Issue No. 2.017. It can be seen in its original form here.

ICES has made many changes in the way it provides its advice. How have the work and the advice improved?

The new advisory structure was developed to allow more stakeholder participation, more transparency, more quality control – including peer review – and an integration of fish-stock and environmental issues at the advice-giving level.

The new structure is mirrored in a string of meetings, each contributing an element to the advice: data collection workshops assembling and quality controlling the data; expert groups doing the data analysis, the stocks assessments, and projections; review groups of independent experts peer reviewing the data analysis; advice drafting groups using the peer-reviewed analysis as the basis for the advice; and the Advisory Committee (ACOM) overseeing the whole process and ensuring that this represents the best available international science.

All advisory groups, with the exception of expert groups, are open to observers. Stakeholders are explicitly invited to data collection workshops to contribute their data and information. The review groups draw on independent experts from all over the world. And all results are discussed in ACOM in light of the international policy norms of MSY, the precautionary approach,



Gerd Hubold.

and an ecosystem approach, while at the same time responding to the specific needs of the management bodies that request advice.

I think we have achieved most of our goals, but the new structures, of course, are not able to resolve the problems of poor data quality and lack of scientific expertise related to some fishery and marine habitats.

It seems that, as the need for strong and accurate scientific marine advice grows, budgets for science shrink, as a result of the crisis in the world economy. Do you think that politicians and managers are aware of the importance of maintaining the funding for marine science? How does this play out in fishery science, where research for advice is not usually recognized as "pure" science?

Marine science is an expensive activity, and many countries invest significant funds in this area. Most of the effort goes into basic marine research, which is adequate, given the high demand for knowledge of the basic functions of marine systems for human survival under climate variability. Unfortunately, the more practical, less "sexy" applications, such as continuous monitoring of fish stocks, stock assessment, and observing environmental parameters, have received less attention from funding agencies and governments. This can have a negative impact on the scientific basis for ICES advice, when Member Countries are no longer able to provide the qualified specialists needed to provide the best advice to marine managers, or when dataseries on the marine environment or

marine life are not maintained.

Marine and fishery research is becoming more complex, multidisciplinary, and comprehensive. How has ICES dealt with this growing complexity?

The political discussions were preceded by similar discussions in ICES scientific network, and the strategic planning for the science and advisory programmes recognized the new demands at an early stage. *ICES Strategic Plan* was developed to fill the new needs, and the restructuring of ICES Science and Advisory Programmes reflects the development towards a multidisciplinary and ecosystem approach. ICES Annual Science Conference brings together all relevant disciplines of applied marine science to provide the scientific basis for multidisciplinary ICES advice.

Uncertainty in the assessment of some stocks sometimes leads fishers to conclude that scientists don't know what's happening in the "real world". Do you think there is enough communication between scientists and the fishing sector? What can be done to improve understanding between the two groups, in light of the difficulty of understanding the advice and how it is produced? Do you think that the RACs have been successful at improving the communication?

In most if not all of our Member Countries, fishery scientists have always had very close contact with the fishing industry and obtained insight into the real situation at sea. But science must be fact-based, and some types of observations are difficult to include in quantitative models. There is, however, much relevant information in such observations, and ICES has begun to integrate such information into the scientific process – with mixed success. The creation of the RACs has facilitated this process, and the dialogue between fisheries and science has increased considerably, gaining in official recognition. Recently, we started to cooperate with some RACs, which are keen to help us improve the database for our work. This development is very welcome by both sides and will eventually lead to new ways of integrating fishers' knowledge with the scientific analyses.

Do you think it is possible to integrate fishers' knowledge with formal scientific knowledge in order to improve the assessment?

That will depend on the success of the new cooperation, e.g. in the data collection workshops, where this kind of information can be contributed to the science process. Both sides must learn that this is not an easy matter, because the format of the different information sources is difficult to merge into consistent and robust scientific models.

Speaking about marine science, in which field do you believe there is more work to do? Where is improvement needed? And which species or stocks require more effort to produce better advice?

Generally speaking, sustainable management of fish stocks needs the best database available to produce the best results in the long run. With a weak data basis, there will always be a risk of misinterpreting the biological developments and, as a consequence, overfishing and loss of productivity may result in poor economic performance.

The new demands from management and society – ecosystem and precautionary approach – will create the need for new science on accompanying species (non-commercial species, bycatches, food and predator species, etc.) and their habitats. Extending our fishing activities into the deep sea demands intensive mapping and an understanding of deep-sea ecosystems – an area of our planet that is almost as unknown as the surface of the moon.

Working together to improve stock assessments

Stakeholders meet in Copenhagen

The Second Data Deficiency Coordination Workshop with the RACs (WKDDRAC2) took place between 31 March and 1 April 2011 at ICES Secretariat. Stakeholders met to look more closely at the problem of data deficiency in stock assessments and to help identify solutions. The meeting followed-up on the first Data Deficiency Coordination meeting, which took place 26 and 27 January. The impetus for initiating the meetings was a proposal from the North West Waters and North Sea Regional Advisory Councils (RACs) to create Regional Task Forces made up of industry representatives, fishery scientists, and managers to help resolve problems in specific fisheries where data deficiencies are affecting management.

Analytical assessments can be affected by different kinds of data problems including uncertainty in catch statistics, missing discard data, missing data for specific stocks, unreliable or unavailable indices of abundance, and/or insufficient information on stock definition.

The meeting was chaired by Barrie Deas (Chief Executive, the National Federation of Fisherman's Organisations) and Colm Lordan (Marine Institute, Ireland). Participants included RAC representatives, ICES scientists (from national institutes), and representatives from the European Commission.

"The composition of the meeting was important", said Deas, "with all stakeholders represented including scientists, RACs, fisheries managers from Member States, and representatives from the Commission from both the data and the policy-management side. This was the first time stakeholders got together at the European level to directly address the problem of data deficiency".

Colm Lordan pointed out that "the exercise helped to create a foundation for strong communication

links, which will need to be maintained in future".

After a discussion of the broad issues, including the importance of defining data deficiency, the scope of the meeting narrowed to consider a practical approach; the group split into two groups (North Sea and North West Waters) to identify data problems on a stockby-stock basis. Deas commented, "One point that came up during the broad discussions on the first day and surfaced again on the second day is the cyclic problem that the choice of model used in an assessment determines the kind of data required, and often a model is chosen based on the kind of data that is available".



Colm Lordan (left) and Barrie Deas Chaired the WKDDRAC2 meeting in Copenhagen.

According to Deas, "In the North West waters group, participants were able to identify 22 stocks as 'high priority'. These 22 stocks included those that will be benchmarked in 2012, as well as stocks of

anglerfish, hake, monk, megrim, cod, and sole".

For each of these stocks, participants identified deficiencies in existing data and possible solutions, and allocated responsibility based on the problems identified (i.e. who can help get the data), for instance in the realms of government (Member States) or industry. It is hoped that, by assessing the data needs together, solutions can be coordinated in the most appropriate domains.

"The next steps will be taken in domains where responsibility has been assigned and actions to address the problems have been identified", said Lordan.

Deas sees this as "an important initiative that will be welcomed by industry; hopefully, it will mark a turning point". Industry is interested in helping to resolve some of the problems with data deficiencies, because better data means better assessments, which will allow for more effective management.

The report of the meeting will be available soon on the ICES website.

ICES work on MSFD continues

ICES is developing MSFD's Descriptor 3 of "good environmental status" (commercially exploited fish and shellfish)

The European Union's Marine Strategy Framework Directive (MSFD) seeks to ensure that "good environmental status" (GES) is achieved in marine waters of all Member States. But defining GES and determining how it will be measured are not easy tasks.

ICES has been involved in the policy process from the beginning, including jointly managing the task groups that developed the 11 descriptors of GES two years ago. The MSFD aims to achieve the goal of GES by 2020, a pressing deadline considering that the baseline information for assessment of compliance is not yet available.

ICES offers a service

Now, as relevant indicators for the descriptors under the MSFD are urgently

being developed, ICES has undertaken to offer, as a service to Member States and Regional Seas Conventions, internationally consolidated scientific input for Descriptor 3, as well as fish- and fisheries-related input to other MSFD descriptors, notably the descriptors of biodiversity, habitats, and foodwebs. This will ensure consistency between methodologies and indicators, as well as helping to ease the costs of implementing the MSFD, given limited Member State resources.

ICES is already contributing to the creation of indicators on fish and fisheries by providing input data and supporting indicators for the Data Collection Framework, EuroStat, and the European Environment Agency. ICES has identified the need for a consistent set of indicators that can be used for ICES annual advisory reporting, as well as being useful to other parties.

ICES workshops

The process for developing Descriptor 3 is as follows. A core team of experts will be established, including some of the experts from the previous MSFD Task Group on Descriptor 3. ICES workshops, which are open to all interested parties, will be arranged to support the work of the Core Team in its development of indicators on fish and fisheries. The focus will be on MSFD Descriptor 3, but the workshops will also investigate contributions from fishery surveys and fisheries data to other descriptors (D1, D4, and D6), and explore how a set of fishery indicators may simultaneously satisfy the needs of other indicator users.

The first workshop has been planned for 4–8 July 2011. The core team will work on the outcome of this workshop, and additional workshops will be arranged in autumn. The work will conclude in November or early December with a report addressed to EC, Member States, and Regional Conventions.

More information on the Marine Strategy Framework Directive can be found here.

ICES Journal of Marine Science

Editor-in-Chief Andrew I. L. Payne reviews highlights, recent and future

Have you seen the latest symposium issue published by the *ICES Journal* (Issue 4 of April 2011)? It is certainly worth a good peruse, covering a symposium on satellite remote sensing and fisheries held in India a year ago – colourful as well as scientifically rigorous. We also have a couple of other symposium issues well advanced to look forward to.



The first is about Climate Change, Fish and Fisheries (CCFF; due out in July as a bumper 350+-page issue), and the second covering the topical issue of Collecting Fishery-Dependent Data to support Management (another extra-size issue, from a symposium held in Ireland and due to be published in September).

Given the recent earthquake and tsunami in northern Japan, the CCFF issue, which is based on a meeting held in Sendai (close to the epicentre of the tragedy) in April 2010, will hold poignant memories for many of the participants who were privileged to visit that wonderful place in April 2010. Indeed, we are dedicating the CCFF issue to the memory of all those who so tragically lost their lives there earlier this year.

CCFF will also be the first symposium issue to be trialled successfully with the electronic submission system (ScholarOne) that *Journal* standard issue manuscripts have used for two years now. That success is to be followed by a similar electronic submission, tracking, and processing system being applied to two recent and one imminent symposia, the 5th International Zooplankton Symposium (publication date scheduled for May 2012), Hydrobiological Variability in the ICES Area (July 2012), and Climate Effects on Polar/Subpolar Ecosystems (September 2012). Not all ICES-associated symposia published in the *Journal* will be handled by ScholarOne, but we are keen to make it the *modus operandi* of choice for most of them in future.

We now await the 2011 version of the Science Citation Index, to see whether our upward trajectory has continued. We cannot expect it to rise every year (there is always noise in the system), and last year's record level was stimulated not only by some very good papers, but by one particular paper that covered ocean acidification and yielded masses of citations, but provided we are still moving forward positively, then we can assume that we are doing something right for the ICES scientific community! We have certainly cleared our backlog, though some authors have felt the need to complain about our heightened rigour, which has led to overall rejections of standard issue material approaching 60%. However, that is par for the course for reputable marine scientific manuscripts, and we are confident that our strategy is paying dividends in terms of the respect in which the *Journal* is now held internationally.

More information about *ICES Journal of Marine Science* can be found here.

ASC Online Registration is now open

Register early and save

ICES Annual Science Conference 2011 (ASC) will take place in Gdańsk, Poland, 19–23 September. If you are planning to attend this year's conference, please register and make hotel reservations as soon as possible, because another large conference will be held in Gdańsk at the same time, and hotel rooms will be hard to find later in the summer. Early registrants will be eligible for the early-registration rate of €130, until 1 August 2011. After that, the registration fee will be €180. A one-day entrance fee of €60 is also available.

A reduced rate of €65 is available for students as well as members and alternates of the Science Committee (SCICOM) and the Advisory Committee (ACOM), Expert Group Chairs under SCICOM and ACOM, and nationally appointed Member Country Delegates to ICES, who register on or before 1 August.

What is included?

The registration fee covers:

- a conference welcome bag with the conference handbook and DVD, the conference programme, and local tourist information about Gdańsk;
- attendance at all sessions of the main conference (except where noted);
- the welcome reception on Monday evening and the poster session on Tuesday evening;
- coffee and tea during the breaks.



Gdańsk, Poland.

More information about the ASC and online registration can be found here. Hotel reservations can be made here.

Grammar Slammer

William Anthony says, "That or which? You're both pretty".

Life's ambiguities often lead to disappointment. Grammar pundits love to exercise their punditry by making pronouncements about how authors should lead their grammatical lives. Cases without clear rules often leave pundits feeling frustrated and disillusioned. For example, I was disappointed to learn recently that participating in pie-eating contests and scratching are not considered aerobic exercise.

Imagine my chagrin at having to admit that, in the case of *that* vs. *which*, I cannot in good conscience give an absolute rule, although I can state my stylistic preference, which feels almost as good but not quite.

So, what's the hubbub, bub? First, let's look at the would-be rule propounded by certain experts, most of whom are of the North American persuasion.

Use *that* in a restrictive clause, i.e. one that contains information necessary to complete understanding. It is not set off with commas. Use *which* in a non-restrictive clause, i.e. one that contains supplementary information, and set it off with commas. Summarized in the popular table format:

| that | necessary | no commas | restrictive |
|-------|---------------|---------------------|-----------------|
| which | supplementary | set off with commas | non-restrictive |

Let's look at an example of a restrictive clause.

Eels that originate in North America are called *Anguilla rostrata*.

Without the clause *that originate in North America*, the sentence is incorrect: *Eels are called* Anguilla rostrata. The information is essential. Notice the absence of commas.

And now, an example of a non-restrictive clause.

European eels, which are not members of the hot dog family, are called *Anguilla anguilla*.

Without the non-restrictive clause, the sentence still makes sense: *European eels are called* Anguilla anguilla. The information is not essential. And to indicate that it is not central to the sentence's meaning, the non-restrictive clause is set off with commas.

The problem is that not everyone on the planet who writes English (or pretends to) agrees with this rule. Historically, *that* and *which* have been used as restrictive and non-restrictive pronouns interchangeably for centuries, although *which* is used more often in the restrictive sense than *that* is used in a non-restrictive sense.

In their 1906 book *The King's English*, H. W. Fowler and his brother Francis George argued that confining *which* to non-restrictive uses would be helpful. In the 1926 edition of his Fowler's *Modern English Usage*, H. W. expanded on the point, "if writers would agree to regard *that* as the defining relative pronoun [restrictive, in our manner of speaking], & *which* as the non-defining [non-restrictive], there would be much gain both in lucidity & in ease". Writers of the King's English have pretty much ignored that suggestion.

The North American penchant for the use of *that* and *which* as restrictive and non-restrictive, respectively, may stem from E. B. White's 1959 reworking of William Strunk's classic *The Elements of Style*, in which White wrote in a tone of unassailable authority, "*That* is the defining, or restrictive pronoun, *which* the nondefining, or nonrestrictive."

In my opinion, the Fowler boys had it right. Observing the distinction between necessary and supplementary information, through the use of the markers *that*, *which*, and commas as appropriate, adds clarity to scientific writing. And clarity is the purpose of all this hoo-hah when trying to communicate scientific information.

Of course, it's possible to write as George Eliot did in her novel *Middlemarch*, using *which* restrictively:

If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heart beat, and we should die of that roar which lies on the other side of silence.

But that would mean pulling up stakes, abandoning your family, pets, and colleagues, and moving to the humanities camp.