Open session

What does "integration" mean for ICES? Current practices and new ideas towards a philosophy of integrated evi-dence-based advice; paired with ICES ASC Games Night featuring "The Beer Game"

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The open session was based around an exploration of the word "integration" (and associated verbs and adjectives) and the wide range of usages within ICES. The word is used 84 times in the ICES document "Implementing the ICES Strategic Plan", in a variety of contexts, but on the other hand it is only mentioned twice in any document de-scribing formal relationships between ICES and its clients (in the AA with the Europe-an Commission where ICES advice is required to integrate peer review processes). ICES is though fundamentally an integration organisation – it facilitates the integration of data from multiple countries and to provide advice, of surveys to ensure efficient use of resources and of scientific expertise to provide consensus views on multiple issues. It would be reasonable to assume that clients regard ICES as being integrated without ICES having to be explicit about it.

What is INTEGRATION: Different definitions of "integration" for different purposes

To get the audience's views, we conducted a www.Kahoot.it question and answer session. The audience of around 30 interactively explored different views of what integration meant and might look like. It was broadly agreed that ICES could better serve society, such as by providing advice for ecosystem-based fishery management, by integrating more disciplines. Initial discussion revolved around ICES being mostly founded on a natural science process and that if the ecosystem approach was to be followed then there needed to be a better integration of ecological and fisheries assessment sciences, as well as integration (combined use) of disparate datasets.
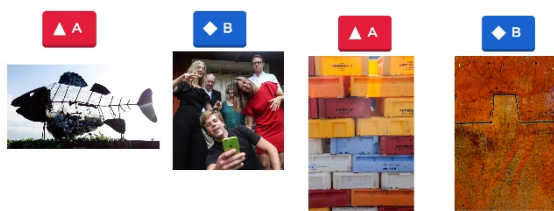

Figure 1: Two example questions from the Kahoot survey. The audience was asked "Which of these pictures represents "integration" to you? Choose "A" or "B"." for 11 different pairs of pictures. When there was an equal amount of respondents for A and B, the moderator then opened the floor so the audience could discuss their views.

Next, to illustrate the diversity of the use of the term "integration", we showed a video[1] where various ICES colleagues, including members of various ICES EGs and officers from the ICES Secretariat, summarised their answers to the question "What does INTEGRATION mean to you?" The answers ranged from connecting different disciplines through conceptual and other

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[1] https://www.youtube.com/watch?v=7ZpwRYwyL1U&t=12s

models to linking up various oceanographic and ecological data to getting diverse stakeholders and experts around the table to share knowledge.

How to INTEGRATE?

Since humans and their activities are part of, and greatly influence marine ecosystems, further developments should include the social sciences. The challenge lies in how to integrate – it is likely that ICES processes will need to adapt to bring in these sciences, and that the social scientists will need to adapt methods to ICES needs. Social scientists attending the session felt that ICES needs to be more obviously open to new ideas and people and that mechanisms need to be put in place to develop trust. There is a perception at least that it is difficult to join in work in well-established bodies such as the Expert Groups. A stepped process would likely be the most successful, starting with a framing of the issue through a wide dialogue. Goals for integration are needed, but are hard to define. A formal Dialogue Meeting on this was suggested as a possible way forward.

The possible downsides of integration were noted in the context of "fisher's ecological knowledge" – if this were integrated into the current advisory framework, this might reduce the power of fishers to subsequently influence processes through the use of that knowledge. This is an example of the difficulty of integrating data and knowledge sources without a proper classification of the ontology of the data; a framework that shows the data's properties and relations between different types of data.

The Beer Game: Linking INTEGRATION to teamwork, systems thinking, & the art of the impossible

In the evening, the Convenors of the Open Session organised the playing, by around 80 participants, of the well-known Beer Game[2] devised by the prestigious Sloan School of Management of the Massachusetts Institute of Technology (MIT). This game demonstrates how what should be a fully integrated supply chain can be disrupted chaotically by even minor changes in decisions in any parts of the chain, the so-called "bullwhip effect"[3]. It was also obvious that the availability of more information on the behaviour of others in the chain did not reduce this disruption, but instead had the effect of slowing the chain down. The processes and advice products by which ICES provides advice may be likened to a supply chain and equally need careful management. But at the same time, the Beer Game teaches that even seemingly simple situations (like a logical 4-part supply chain) have no obvious solution due to system delays, system unpredictability and the social element of teamwork, or lack thereof.

We received much positive feedback from the participants of the Beer Game: it was interactive, social, fun and an eye-opening learning experience for all 80 participants. We conclude that ICES ASC should continue the tradition of a Games Night, and re-man at ICES' disposal for brainstorming about an appropriate game/topic for Hamburg ASC 2018.

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[2] https://en.wikipedia.org/wiki/Beer_distribution_game

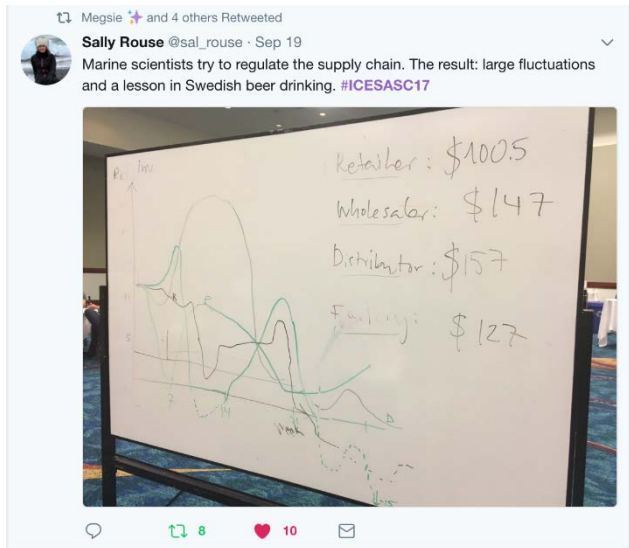[3] https://en.wikipedia.org/wiki/Bullwhip_effect

Figure 2. Screenshots from the Twitter hashtag #ICESASC2017 regarding tweets about the Beer Game.

Figure 3. The Beer Game in progress during Games Night at ASC 2017.