Network session Report 2021

ICES networking session: A new era for science-industry collaboration

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Direct engagement of the fishing industry in the co-creation of knowledge and data for research and management is becoming increasingly prevalent worldwide. In the ICES region, recent years have seen examples of scientific professionalisation of the fishing industry. Industry initiatives for data collection and data provision create opportunities for ICES, while at the same time raising important questions in relation to the standards for scientific information that is to be used as basis for scientific advice.

Industry engagement with science has waxed and waned over time and can be sensitive to the timing of prevailing issues related to management. What is the appetite and capability of industry to make meaningful contributions to scientific understanding? How does that match with the needs for scientific information to address short- or long-term issues relevant to the ICES community and its clients?

ICES is in currently in the process of developing guidelines for industry data and stakeholder engagement through several workshops (WKSCINDI 2019, WKDSG 2021, WKSHOES 2021, WKEVUT 2022). The networking session aimed to contribute to that process by bringing together experts from different background to address the following issues:

- inventory of scientific data needs and ways for fishing industry to meet them;
- new technologies enabling the collection and uptake of data generated by the fishing industry;
- incentives to initiate and maintain data and information streams between industry and science;
- assessing the potential of collaborations between fishers from different coastal states to create a common knowledge base for shared fish stocks;
- validation, transparency, and accountability: issues and opportunities around the generation and provision of reliable data;
- creating efficient feedback mechanisms: from industry to science and from science to industry;
- how to bring in fishers' experiential knowledge into the scientific process in a consistent way.

The networking session lasted for one hour on Friday 10 September 2021. A short inspirational video on science-industry collaboration (SIRC) was available prior to the session: https://youtu.be/FsfBEBbpvck. During two polls at the beginning of the networking session, the 78 participants identified themselves as scientists (82%), fishers or fishing industry representatives (5%), policymakers (5%), NGO representative (1%) and other (6%). The participants indicated that 66% of them had some experience in SIRC projects (ranging from occasional [35%] to almost full-time [5%]) and 34% had no prior experience.

Two thematic breakout sessions were held as part of the networking session. For each of these two 10 minutes' sessions, participants were divided in four subgroups. Below, the common findings for the two questions are summarised.

Breakout 1: Are there specific scientific needs that could be addressed with industry collected data or knowledge?

The following scientific needs were identified:

- improving temporal and spatial data for age-length relationships, maturity;
- information on niche-level habitats;
- information on non-commercial species for biodiversity metrics;
- climate change data;
- information on changes related to large-scale offshore windfarm development;
- improving continuous information input from studying fleet dynamics;
- gear technology knowledge in relation to surveys (gear maintenance, rigging);
- validate our models as a way of improving confidence;
- improving understanding of industry motivations and why fishers do certain things;
- socioeconomic data;
- impact of fisheries and fisheries management on society and fishing communities, understanding fisher culture and way of life.

In relation to these data needs, some subgroups also identified some challenges in relation to these data needs:

- bias in self-sampling data if they only cover one fleet in an ecoregion where multiple fleets are involved in the same fisheries;
- interpretation of fisher data is challenging;
- scientific processes in which fishers are involved is often dominated by scientists with fishers often seen as a data supplier and not as a partner with fishers also not having time to attend;
- the receiving science systems are slow to integrate fisheries-dependent data provided by industry;

- how to get experiential knowledge of fishers into a system that is dominated by models and statistics;
- overcoming trust issues (on both sides), particularly if there have been negative experiences in the past;
- suspicions about motives of industry to contribute data;
- funding for industry data collection schemes is often short while science needs long-term time series;
- integration of social science data and experiential knowledge in fisheries and ecosystem science that is dominated by models and statistics (different type of data, funding). Receiving systems will need to be reformed to deal with transdisciplinary approaches.

Some of these challenges have a direct relation with the second discussion topic.

Breakout 2: How can science-industry collaboration be made sustainable (i.e. lasting long)?

Prior to going into breakout session 2, a poll was presented to kick off discussions. Participants were asked to select 'the most promising mechanism that facilitates continued availability of industry data and engagement, recognizing this is not a guarantee'. From the total of 43 respondents to this poll, 21% thought that inviting industry to contribute data and knowledge to targeted science questions was the most promising mechanism for facilitating continued availability of industry data and engagement (whilst recognising the latter is not a guarantee); 19% selected inviting industry knowledge in the interpretation of stock assessments and ecosystem indices, 2% chose inviting industry to contribute data in data-poor situations only; the majority (58%) felt that showing industry that their data is being used and makes a difference, is what will drive continuous availability of industry data.

In the subgroups discussions, the following main themes emerged in relation to making industry data contributions sustainable:

- continuous funding;
- transparency about why data are needed and how they are being used;
- expectations management (do not overpromise);
- communication and feedback throughout the whole process, from inception to joint interpretation of results;
- development of good relationship, mutual respect and trust;
- give fishers/industry ownership of the data they collect;
- necessity of soliciting regular feedback;
- respect different roles.

Plenary

Following the breakout sessions, the closing plenary session discussed ways forward in relation to industry data and information contributions within the ICES context. In ICES several separate workshops are being organised on industry data and stakeholder engagement (e.g., WKSCINDI, WKDSG, WKSHOES, WKEVUT). The convenors suggested that ICES could benefit from a more structural approach, also involving the stock assessment working groups and experiences from scientists and industry outside Europe. One way forward would be to set up an initiative on the integration of industry data, knowledge and information. Participants were asked to respond to this idea through a poll and expressing their interested in participating in such an initiative in the session chat.

The poll (N=33) showed that a large majority fully agreed with the statement that 'Setting up an ICES (Strategic) Initiative tasked with how to integrate data and knowledge from industry, involving experts from outside Europe, is much needed; 24% somewhat agreed and 3% somewhat disagreed.

In this context, it is important to explicitly consider that science is not monolithic, and different ontologies and epistemologies should be taken into account in discussions about how to integrate data, information and knowledge from industry in the ICES system.

In the chat, 6 participants expressed their explicit interest in such initiative with chairs from WGMARS, WGSOCIAL, WGECON, SHID, TIFD, IEASG offering assistance.

Conclusions

The networking session was held in the context of ongoing initiatives within ICES designed to open science to new forms of data and knowledge and improve stakeholder involvement. Its aim was to contribute to these ongoing discussions. Participants saw clear benefits but also challenges to industry contributions the scientific process.

There was general support for the idea of setting up a Strategic Initiative on Science Industry Research Collaboration (SISIRC) to coordinate the separate workshops on this topic, bring different expert groups together and learn from good (and bad) practices from expert groups that already have experiences in relation to collaborating with industry and using observational or experiential knowledge from fisheries. There was concrete interest in participating in such an initiative from several expert group chairs and individual scientists. The session convenors are happy to engage with the ICES Secretariat and SCICOM in further discussions about the potential of a SISIRC.

Wordle from the session chat

Feedback

The way the session was set up, with breakout rooms, allowed for a lot of interaction and discussion. The convenors thank the secretariat for their support, including finding out how to set up breakout rooms the day prior to the meeting and organising these breakout sessions. The session was unfortunately only 1 hour so that breakout sessions were only 10 minutes and plenary discussions were also restricted.

Some participants gave feedback in the chat. This was very positive feedback. The session was considered to be innovative, interactive and short but very good. Participants enjoyed the opportunity to actively provide input.