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i Executive summary

The Science Committee (SCICOM) met remotely and received updates on ongoing activities under the Steering Groups, Operational Groups and Strategic Initiatives, and discussed strategic developments relevant to the Committee. Strategic issues included updates on activities within the UN Decade of Ocean Science for Sustainable Development and the joint ICES/PICES Ocean Decade Steering Committee, cooperation with PICES, activities in the Arctic and updates on increasing the engagement with physical and chemical oceanographers. The Subgroup on Ecosystem Based Management (EBM) presented a framework on EBM, which SCICOM welcomed. The Bureau-Council Subgroup on COVID-19 presented seven recommendations to be presented to Council for approval. SCICOM discussed further and decided on objectives and measures on engagement with national activities and national priorities, and strengthening international.

The Steering Groups (SG) gave an overview of their work, reporting on challenges of expert groups continuing to work remotely.

Updates from the Operational Groups included the final implementation of the new library system on the ICES webpage (Science Impact and Publications Group, SIPG) and the new online format for training courses as well as the development of a strategic plan for the training programme (Training Group, TG). The Data and Information Group (DIG) presented on the development of a data preservation plan and the developments on the new data portal.

The Strategic Initiative on the Integration of Early Career Scientists had been approved inter-sessionally, and its overall objectives and planned activities were presented at the meeting. The other Strategic Initiatives gave an update on their work.

The Chair of the Advisory Committee (ACOM) gave an update on developments in advice, including the advice in 2020, the process of advice production, special advice requests being addressed by ICES and the Benchmark Oversight Group. One ACOM Vice-Chair provided an update on Ecosystem, Fisheries and Aquaculture Overviews and Viewpoints. An overview was also provided on the EU request on the trade-off between seafloor disturbance and fisheries landing and the products that have been developed for the request. An update was also given from the Workshop on Stakeholder Engagement Strategy and SCICOM welcomed the timeline for developing the Stakeholder Engagement Strategy.

Key actions from the meeting included SCICOM support of an initiative of the Strategic Initiative on the Integration of Early Career Scientists on having one of the ASC keynotes being an Early Career Scientist. SCICOM approved the theme and network sessions and selected a keynote speaker for the Annual Science Conference (ASC) 2022, which will be held in Dublin, Ireland.

1 Opening

The SCICOM Chair welcomed participants to Day 1 of the virtual SCICOM September meeting, scheduled to take place on three separate days, 1, 13 and 15 September 2021, 15:00–19:00 CET.

A warm welcome was extended to the new participants: Ann-Lisbeth Agnalt, ASG Chair; Andy Kenny, incoming HAPISG Chair; Kathy Mills, SICCME Chair; Katell Hamon, SIHD Chair; as well as Alina Wieczorek, Amanda Schadeberg, Fedor Lishchenko, the Chairs of the Strategic Initiative (SII ECS). SCICOM Chair thanked the three PICES representatives for attending the SCICOM meeting.

SCICOM Chair drew the attention of participants to the [ICES meeting etiquette document and ICES Code of Conduct](#) and asked that if anyone was unable to abide by the code, they should make this clear to the meeting. No person suggested they could not follow the code.

The meeting agenda for the three days of SCICOM meetings was introduced. There were no additions to the agenda. A tour de table was conducted. The full list of participants is available in Annex 1.

2 Follow-up on actions and decisions taken at the meetings of SCICOM

SCICOM Chair drew everyone's attention to Document 3-1, Minutes of March 2021 SCICOM meeting, and Document 3-2, Actions completed from March 2021. All actions had been completed prior to the meeting, except for two actions that are ongoing:

- Action: SCICOM national members requested to send information on national UNDOS activities relevant to ICES, including contacts to national focal points of planning groups, to the SCICOM Chair.
Good feedback was received from national members in March 2021, but updates and changes are from national members are still welcome!
- Action: A request is made to SCICOM to enquire whether ICES material might already be digitized by member country institutions, and whether this content could be shared with ICES (to be sent to ICES Editorial Office). A list will be provided with the content of interest by ICES Editorial Office.

3 Reports and highlights from Steering Groups

3.1 Aquaculture SG

Mike Rust (ASG Chair) presented the work of ICES aquaculture. It is still a small part of the ICES universe, but has been growing within the last couple of years. The ASG has shifted focus to developing aquaculture advice within the last year. Although there has been growth in the steering group, there is still a need to build up a critical mass of expertise to meet the demands for solicited advice.

The ASG chair presented the science highlights from the groups, including: ICES countries have similar laws governing aquaculture and need similar types of advice; risk assessment in development; ICES countries will not provide region with enough seafood to meet needs; no real plans to increase aquaculture in ICES countries; and regulations often blamed, but this is an opportunity for science-based governance tools.

The Norwegian Sea Aquaculture Overview is now passed on to the ICES Advisory Committee and will be published later this year. The ASG is in initial planning stages for the Faroes and Celtic Seas Aquaculture Overview in 2022. At the moment, there is not any solicited advice for aquaculture. However, through the stakeholder survey, conversations with DGMARE and other countries, it is clear that regulatory professionals are interested in ICES scientific advice and can also help guide ICES.

To set a foundation for requested advice, ICES can use the national level stakeholder group and ASG to help define additional advisory product. Other opportunities for integrating aquaculture in ICES can be linking to ICES Strategic Initiatives the UN Decade of Ocean Science for *sustainable development*. The key is to focus on the sustainable development of aquaculture.

The ASG Chair welcomed the new ASG Chair, Anne-Lisbeth Agnalt, from the Institute of Marine Research in Norway. Both chairs will be working on the aquaculture vision document that came out of the stakeholder survey and ecosystem approach framework together. Anne-Lisbeth comes with a solid aquaculture background and international experience that will be beneficial for leading advancement of aquaculture science and advice in ICES.

Comments/discussion:

The ASG Chair confirmed that engineering and technical experts would have an interest in joining ICES as engineers need to interact with biologists to be able to develop sustainable aquaculture systems, not causing environmental harm and being socially responsible. The Working Group on Open Ocean Aquaculture already has a lot of engineers. This group also deals with multi-use in regards to integrating wind-farms with various aspects of aquaculture in German waters, but was frustrated by the regulatory hurdles that comes with multi-use.

Seaweed is also becoming increasingly popular and although ASG does not have a specific seaweed group, the topic is scattered amongst the different expert groups, for instance the coastal management groups and Working Group on Ecological Carrying Capacity.

SCICOM thanked Mike Rust for his leadership of the ASG and important contribution to ICES.

Resources shared:

https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/Special_Requests/NASCO_AquacultureEffectsAdvice.pdf

<https://www.seafish.org/insight-and-research/current-and-future-trends/climate-change-impacts-and-adaptation/>

<https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=37580>

3.2 Integrated Ecosystem Assessments SG

Debbi Pedreschi (Chair of IEASG) with reference to Document 4.3-1 gave an update from the Integrated Ecosystem Assessments Steering Group.

Expert groups under IEASG have continued the intersessional approach, with several expert groups having multiple meetings (rather than one annual meeting). Most have adapted well to online meetings and ToR appear to be on track. Some groups have reported that they feel overwhelmed in relation to the topics to be dealt with. Since integrated ecosystem assessments cover everything, it can be difficult to find where to start. IEASG Chair is working with groups to identify ways forward.

Communication between IEASG chair and groups – IEASG met virtually in connection with WGCHAIRS, and also had a knowledge exchange with SIHD in May (a presentation from each of the groups established by SIHD to help see how IEASG EGs can better integrate human dimensions into their work. IEASG has sent intersessional email with relevant updates to IEASG EG chairs and has an “open door/email” policy. Diversity, Equality and Inclusion is a recurring agenda item at IEASG meeting.

Highlights from IEASG groups were presented. IEASG Chair has contributed EOOP Ecosystem Overview Operational Group and to ACOM/SCICOM EBM subgroup as Chair, together with Marie-Julie Roux.

Three workshops were held under IEASG this year (WKSHOES in June, WKCCMM in November and WKCLIMAD in September and October). There are a number of suggestions for upcoming workshops in 2022 and 2023 (on ecosystem services, foodwebs, and there is interest in follow-up to Workshop on operational EwE models to inform IEAs (WKEWIEA) and Workshop on Challenges, Opportunities, Needs and Successes for including human dimensions in IEAs (WKCONSERVE).

SCICOM feedback and consideration was sought on the following items:

- Nominations and suggested chairs for the new workshops welcome
- Expert with experience in Conceptual Modelling tools (WKCCMM) sought
- ICES nominations for Joint ICES/PICES Working Group on Integrated Ecosystem Assessment of the Northern Bering Sea-Chukchi Sea (WGIEANBS-CS)
- Lack of knowledge on who their SCICOM /ACOM national representative is...
- Some issues / confusion around ‘political’ side of some joint groups

Comments/questions

ACOM Chair informed IEASG Chair that ACOM is now reopening the MSFD D4 (discussions on foodwebs) with DG Environment, and we have a technical service to review all European national reports on foodwebs for D4. Trying to postpone the advice part of that till next year. IEASG chair thanked for the update and would be interested in keeping abreast of this development. Almost all IEASG groups have experts on Ecopath (foodweb) modelling.

The recommendation from WKTRANSPARENT to have methodological training of IEASG is still under development – dates have not been finalized.

The interactive pressure maps made by WGINOSE are relevant to all IEASG groups and it should be possible to facilitate this and semi-formalise a roll out of the pressure maps to multiple groups.

There are synergies and shared challenges between IEASG and HAPISG, in dealing with cumulative effects assessments, and how these can be packaged and presented for wider use within the ICES community including developing data sets on pressures, activities and impacts.

3.3 Fisheries Resources SG

Patrick Lynch (FRSG Chair) with reference Document 4.4-1 gave an update from the Fisheries Resources Steering Group.

It was highlighted that all groups were able to meet their advisory needs, which is quite remarkable given that all meetings happened online. The groups are stretched completely because of the pandemic, which limits strategic planning, and new activities and initiatives.

SCICOM was updated on the following workshops:

Benchmark Workshop on the development of MSY advice for category 3 stocks using Surplus Production Model in Continuous Time (WKMSYSPiCT). This was an efficient way of doing benchmark assessments, looking at the assessment itself rather than each stock assessment individually. This approach was appropriate for some, but not all stocks.

WKFEA: Recommendations for issues to be addressed on the science side included spatial assessments for European eel, better data for stock analysis, and thinking about eel advice in the context of ecosystem approach to management.

WKRCHANGE: This workshop was held on changing reference points. Recommendations were provided, including a decision tree about when and how you may want to set reference points, and applicability across steering groups, SCICOM and ICES in general.

FRSG held a nice breakout in connection with WGCHAIRS in January and an additional – more operational and advice related - meeting was held in February. The next FRSG meeting will be in held on 8 November and will be looking at strategic directions for ICES stock assessments

Considerations from the science realm:

- Data collection issues: There will be a need to address issues related to data collection gaps caused by COVID. The system is resilient in the short term, but if this situation continues over the long term, this will have a more serious impact. The situation must be tracked and we need to figure out how to deal with this potential threat together.
- Improve stock assessments from where they are today. Stock assessment science is becoming more holistic, embracing all the expertise across marine science in general, thinking about spatial assessments, ensemble modeling, ecosystem and socio-economic connections. This will be further explored by FRSG in November.
- Better alignment with EBM/EBFM objectives.

Comments/questions

It would be useful to organise a workshop on how the human dimension can be integrated in the stock assessment process.

ACOM Chair raised three points: 1) TAF is collapsing; the groups are just not using it, and the stated reason is COVID. ACOM is asking Bureau for funding to develop TAF, not the technical development, but the implementation, take-up and general guidance around TAF. 2) ACOM Chair suggested inviting Verena Trenkel to attend the FRSG productivity audit. 3) Agreed that FRSG EGs have done well up till now, but the stock assessment process is beginning to collapse, in terms of benchmarks, developing new methods and in terms of doing stock assessments.

FRSG in response to item 3, asked if there is room for exploring prioritisation, and do less rather than seeing a collapse? ACOM chair replied that prioritisation is difficult when you have clients and requesters, and with Memoranda of Understanding. We will create prioritisation through non-delivery.

3.4 Ecosystem Observation SG

Joël Vigneau (Chair of EOSG) with reference to Document 4.5-1, gave an update from the Ecosystem Observation Steering Group. An overview of Expert Groups under EOSG (12 working groups and 6 workshops) was provided.

Two groups, WGISUR and WGISDAA, are struggling to find new participants. These groups have been allowed a gap year in 2021 to have time to re-think the future and focus of the groups.

WKSAE-DATRAS did not have results living up to the expectations because of little time to prepare the meeting.

WKPilot NS-FIRMOG is a recommendation and follow up of WKREO, aiming to better integrate all surveys in a region and have a full dashboard of all the data that is being collected in specific region. The workshop will be chaired by Ingeborg de Boois.

Science Highlights. EOSG Chair will introduce a dashboard to provide a better overview of science highlights. This will be introduced at a future EOSG quarterly meeting.

One of the EOSG priorities is to improve quarterly meetings to make them recurrent and focus on minute taking in order to share the output of each meeting. EOSG needs to link better with other expert groups to see how we can meet the needs of advice, data, etc.

3.5 Human Activities, Pressures and Impacts SG

Sarah Bailey (Chair of HAPISG) with reference to Document 4.6-1, opened her presentation with an overview of the steering group. In 2021, there was a total of 32 working groups and 8 workshops embracing very diverse topics.

Update on Expert Groups

EGs are on track with their ToRs and show high productivity (publications, papers) but find it challenging to keep operating remotely full-time.

Working Group on Marine Sediments (WGMS) and Marine Chemistry Working Group (MCWG) are merging in a combined group in 2022. This will allow to strengthen cooperation and solve low attendance issues.

Working Group on Marine Renewable Energy (WGMRE) has been renamed Working Group on Offshore Renewable Energy (WGORE) and is a broader version of its predecessor in terms of scope.

Many EGs have contributed to science highlights & viewpoints, examples: WGSHIP, WGOWDF & WGMRED.

WGCEAM has developed a framework for cumulative effects assessments for management which could be used as a strategic activity across HAPISG expert groups.

Science to Advice highlights:

WGECON & WGSOCIAL contributed to Ecosystem Overviews;

WGFBIT made a contribution to advice for EU;

WGMRED made a contribution to advice to OSPAR

WGSFD, WGDEC & WKPHM supported advice activities on VMS

Joint ICES/IUCN-CEM FEG Workshop on Testing OECM Practices and Strategies

Overall, EGs have rather few advisory ToR; there is room to continue developing in this area. EGs are interested in contributing to Ecosystem Overviews and Viewpoints.

Forward look:

Andrew Kenny has been elected as incoming SG Chair. Handover is well underway. The plan is to develop more specific HAPISG ToR (including Viewpoints and Ecosystem Overviews). Strategic areas: Cumulative Effects Assessment; Marine Spatial Planning; Vulnerable Marine Ecosystems. Explore synergies among the EGs.

International Maritime Organization (IMO) activities/cooperation: these are mainly WGSHP and WGBOSV. Important to maintain ICES/ IMO collaborations, HAPISG is essential at keeping these good connections.

Action: Secretariat will work with the outgoing/incoming HAPISG Chairs to develop more specific guidance for participation in IMO activities but maintain flexibility (for follow up by Secretariat) and to transfer the administrator role of the ICES account at the IMO to the Secretariat by December 2021 (for follow up by Secretariat).

ACOM and SCICOM Chairs extended massive thanks to Sarah Baily (HAPISG outgoing chair), acknowledging her outstanding performance and much valuable input as a Steering Group Chair during the past 3 years.

3.6 Ecosystem Processes and Dynamics SG

Steven Degraer (Chair of EPDSG) with reference to Document 4.7-1, gave an update on the progress of EPDSG currently listing 21 expert groups. The majority of groups are on track with their ToR and have adjusted to the current conditions with remote meetings to the extent possible.

This year's focus is set on the development of the operational plan 2021–2023 with the aim of building shared sense of ownership; identifying high-level topics among EGs; identifying EPDSG products. This process was launched after the WGCHAIRS 2021 meeting and will continue via a series of joint EG chairs meeting as well as bilateral meetings between SG chair & individual EG chairs.

Forward look

- Improve feedback to EGs regarding their annual e-evaluations;
- Continue bilateral meetings between SG chair & EG chairs;
- Upcoming EPDSG meeting featuring EGs pitch presentations to be followed by plenary discussion on high-level topics and identification of links between the groups;
- Creation of EGs individual promotion videos in cooperation with the ICES communications team;
- EPDSG potential position paper.

Current EG issues

- Working Group on Seasonal-to-Decadal Prediction of Marine Ecosystems (WGS2D) is currently pending. The group might regain momentum after the upcoming Workshop on pathways to climate-aware advice (WKCLIMAD). To be revisited towards the end of 2021.
- Working Group on Oceanic Hydrography (WGOH) and Working Group on Operational oceanographic products for fisheries and environment (WGOOFE) are looking for optimal ways to establish a connection to fish stock assessment groups.

Action: ACOM Chair, Steven Degraer and Patrick Lynch will discuss these issues further.

3.7 Data Science and Technology SG

Jens Rasmussen (Chair of DSTSG), with reference to Document 4.8-1, gave an update from the Data Science and Technology Steering Group (DSTSG).

An overview of the Steering Group and its 22 expert groups was presented. DSTSG comprises many expert groups that are focused either on developing technology, methodology, parameters or data governance. It was noted that many groups are struggling with the remote meeting setup, as a lot of groups have been holding out being able to have physical meetings, especially the methodology-focused ones, resulting in many meetings being backloaded into the end of the year.

The highlights of the DSTSG were presented:

- The Working Group on Recreational Fisheries Surveys (WGRFS) has published an article on the use of apps for recreational fisheries data;
- WGFAST online meeting was very well attended with more than 100 participants;
- The Working Group on Data Governance (WGDG) has created a unified data submission format, working with the ICES Data Centre to implement and successfully launch it;
- TAF user survey conducted (<https://www.ices.dk/news-and-events/news-archive/news/Pages/TAF.aspx>);
- ICES Smartdots video tutorial and release update: [ICES SmartDots YouTube](#).

DSTSG Chair also presented some challenges that the Steering Group might face in this first period of operation, especially regarding the transition between innovation and operation. Innovative ideas are important, but it's equally important to have something that is operational leading to concrete advice. The FAIR principles aim at making data Findable, Accessible, Interoperable and Reusable, but this also needs to be put into practice. There is still room for improvement on the data and advice linkage. Progress is being made, such as the TAF-SAG linkage. ICES capacity and third-party integration were mentioned as key questions. There is also a need to make sure that the distinction between Data products (coming from within the ICES community but are not explicitly developed or maintained by the Data Centre) and Data storing is clear.

One new group is in drafting stage of resolutions – Working Group on the Joint Cetacean Data Programme (WGJCDP). Another working group/workshop is being planned to look at increasing the third-party integration, webscraping and web service tools to better combine ICES data with data from elsewhere.

The discussion focused on the third-party integration and on its relevance in order to avoid producing double-work. However, it was also mentioned that third-party isn't two ways, ICES is a third party for other people as well.

4 General arrangements for Annual Science Conference 2021

4.1 Update from Conference Coordinator (ASC 2021)

Katla Hrund Björnsdóttir (Conference Coordinator, maternity cover) gave an update on the virtual ASC 2021 scheduled to take place from 6–10 September 2021. All pre-recorded presentations and posters are available on the Whova app, and this is also where the live sessions can be viewed. All live sessions will be recorded and can be viewed on demand until 30 September, as well as all oral and poster presentations.

The ASC programme (consisting of 3 keynote talks, 18 theme sessions, 3 network sessions, panel discussions organized by conveners, and daily speed networking sessions) was presented and SCICOM was informed about the Early Career Scientist day taking place before the conference.

676 participants were registered in Whova, and SCICOM members were reminded that registration was still open.

4.2 ASC Award Selection Group

Lidia Yebra reported from the Award Selection Group. Thanks were extended to all 11 members of the group (Lidia Yebra (Chair), Antonina dos Santos, Guðmundur Óskarsson, Steven Degraer, Svetlana Kasatkina, Mike Rust, Myron Peck, Jos Schilder, Joël Vigneau, Sarah Bailey, and Paulina Ramírez). It had been a challenging task to judge the first fully virtual ASC. Online ASG meetings were held in June, August, and September, with email follow-up. Presentations were evaluated during the summer period, based on pre-recorded materials (without Q&A). There were 18 Theme Sessions with 300 contributions. Each member judged 3–4 theme sessions. Theme session conveners were also asked to nominate.

Some technical issues were experienced with poster recordings:

- Some presenters had only sent in a video of their poster, but the actual poster, which made it difficult to zoom in;
- Time limit was 6 minutes, but not all presenters had been able to shorten their presentations;
- More than 75% of the nominees were ECS.

ASG missed the interaction at the poster session. On the positive side, it was helpful that all presentations were pre-recorded, which made it possible to view the nominated candidates a second time.

SCICOM Chair thanked Lidia Yebra for chairing the group, and all members of Award Selection Group.

Action: ASG Chair and Secretariat to update the guidelines for ASC to reflect the process of the award selection group in a virtual setting.

4.3 Network Sessions at ASC 2021: leads for feedback to SCICOM

The following SCICOM members volunteered to provide feedback from the network sessions:

- Marine ecological forecasts – what do we need? (Monday 6 September): *Brian MacKenzie, John Pinnegar*
- Gender equality, diversity, equity, and inclusion in ICES community (Thursday 9 September): *Steven Degraer, Sarah Bailey*
- A new era for science-industry collaboration (Friday 10 September): *Debbi Pedreschi, Jens Rasmussen*

The full reports from all network sessions will be included in the SCICOM Progress Report 2021.

5 Evaluation of ASC 2021

Katla Hrunn Björnsdóttir (Conference Coordinator, maternity cover) presented the meeting statistics for submissions and withdrawals for the Annual Science Conference 2021:

- 506 accepted presentations in 2020 (359 oral and 147 posters) had been accepted in 2020. All in all, 196 (39%) of the presentations were not resubmitted for the 2021 ASC (92 oral presentations withdrawn (26%) and 40 posters withdrawn (27%). 64 authors did not reply to any emails (13%)
- Theme sessions were not set up in the same format, there was a total of 234 presentations and 76 posters. The recordings would be available until 30 September for viewing.
- 800 registered participants from 37 countries, with a percentage of 32% ECS, there was a slight majority of women attended and 50% of participants informed us that this was their first ASC.
- Engagement and networking – the preliminary Whova stats showed that the majority of attendees downloaded the app, and 7,507 messages were sent, and 80 community topics were created, 92 photos were taken and 18 virtual meet-ups created.
- Initial feedback showed that over-all participants were satisfied with the set-up and 30% of survey responders would like to keep pre-recorded presentations.

SCICOM members were invited to comment and reflect on their ASC experience:

Overall

- Several SCICOM members congratulated the ICES team for a successful conference!
- Some felt that the online format was more challenging, compared to a physical conference where you can dedicate your full attention. Being online, your focus is much more divided.
- Whova app was quite easy to use, and most found this was a good choice. However, there were some challenges with the Zoom integration into the Whova app resulting in connection issues.

Sessions

- The division between oral presentations and poster presentations was meaningless; it would have made more sense to keep posters together with the oral presentations.
- It was nice to be able to see all the video presentations online, especially since it is not possible to attend parallel sessions when attending a physical conference.

- Suggestion to establish a new ASC business model with all presentations pre-recorded, even at a physical meeting. This could be the format of what we used to call CM documents, and it would be great if ICES could provide access for several months.
- There was a huge variation between the conveners, some exclusively ran the sessions and summarised – and some left it to the presenters, which left too little time for discussion. Suggestion to provide more and better instructions for conveners to plan their sessions would be helpful.
- The main challenge was the multiple parallel discussions. The chats in Zoom, in Whova, the Q&A was pretty challenging for chairs and probably also for participants. In general, it was demanding to chair a session on different platforms, also keeping an eye on the chat.
- Suggestion to introduce a board with post-its, where everyone can write their own ideas – not just the stereotype format of asking/answering questions.
- One hour for sessions was far too short; it didn't work since there was too much contents packed into it. It might be an idea to have sessions without pre-recorded presentations. Some thought needs to be given to this for future meetings.

Networking and communication

- Several commented that it would have been nice to see the names of the other attendees, which would have made it easier to network.
- The networking aspects were good, speed-networking was intense, and many of the ECS attended for the first time, and the online format allowed that to happen.
- Difficult to get an overview of the community threads. There was no structure, which made it difficult to get an overview and engage.
- It was nice that it was possible to comment later on, so you could engage, even if you were not able to attend the session. This will be very useful for hybrid and face-to-face meetings.
- Some discussion items can be thought about before the conference (topics to be opened for discussion), and leave the networking discussion for during the conference to avoid too many parallel threads.

Action: The ASC group will analyse the comments in detail and take all the good suggestions and feedback on board for next year's ASC. Please send additional reflections and feedback in writing. All feedback will be put on our lessons learned list.

6 Strategic Initiatives

6.1 ICES/PICES Strategic Initiative on Climate Change Impacts on Marine Ecosystems

Mark Payne (SICCME Chair) notified SCICOM that both he and Christian Möllmann, are ending their terms as the ICES chairs of SICCME. They will be replaced by Alan Baudron (Marine Scotland, UK) and Katherine Mills (GMRI, USA).

Mark Payne gave an overview of the recent IPCC report titled “[AR6 Climate Change 2021: The Physical Science Basis](#)” written by Working Group I that was published in August 2021. This report summarizes the last 7 years of climate science. As a contributor to this report, he was able to provide some insights, including major points that have been in the news headlines lately such as the evidence of climate change is unequivocal and this is the warmest temperature experienced by humans, with the expectation that we will cross 1.5°C in the early 2030s. He also noted that this is the first time the report has included marine heatwaves as a dedicated section of the report.

The upcoming IPCC report titled “[AR6 Climate Change 2022: Impacts, Adaptation and Vulnerability](#)” will be produced by Working Group II and is aligned with some of the work conducted by the ICES network. Numerous ICES members will be contributing to this volume, including John Pinnegar (small islands chapter), Kirstin Holsman (North America chapter), Shin-Ichi Ito and Mette Skern-Mauritzen (Ocean and coastal ecosystems and their services), and Christian Möllmann (Europe chapter).

The COVID-19 pandemic made it difficult to conduct overarching SICCME activities, but a few activities were initiated.

- The Joint ICES/PICES Working Group on Impacts of Warming on Growth Rates and Fisheries Yields (WGGRAPHY) was established and met in September 2020
- The Workshop on Pathways to Climate-aware Advice (WKCLIMAD) had their first meeting in May 2021 to introduce methodology. The workshop chaired by Mark Dickey-Collas (ACOM chair), Kirstin Holsman (PICES SICCME chair) and Michael Rust (ASG chair) will be held in September and October 2021.
- The Working Group on Seasonal-to-Decadal Prediction of Marine Ecosystems (WGS2D) has not met since 2019, and no new chairs have stepped forward to offer to replace Mark Payne who has taken a new job at the Danish Meteorological Institute and can no longer continue as chair. However, WGS2D capped off its tenure at ICES in 2021 by releasing a successful forecast of Sandeel recruitment and hosting the ASC networking session “[Marine ecological forecasts – what do we need?](#)” with 60 participants.

Lastly, new SICCME Chair Kathy Mills (GMRI, USA) was welcomed. She described herself as a fisheries ecologist that works on implications of climate change on fisheries and the human component.

6.2 Strategic Initiative on the Human Dimension (SIHD)

Katell Hamon (recently appointed as SIHD Chair, together with Alan Haynie) with reference to Document 9.2-1, presented an update from SIHD on recent and upcoming activities.

Recent activities included coordination activities such as regular meetings with SIHD related EGs, and also participation in the EBM subgroup, and development of the SIHD roadmap. A short update of the social science research in SIHD related EGs (WGECON, WGMARS, WGECON, WGSOCIAL) was presented.

Some of the upcoming events this year include an informal online SIHD webinar and the MSEAS online webinar, which will be attended by SIHD. Next year, activities include WGBESEO, WGECON and WGSOCIAL online meetings, the MSEAS conference, and the IIFET Biannual Meeting, as well as contributions to the ICES ASC and PICES annual meeting.

SIHD Roadmap will be centred around the 4 pillars of the ICES strategic plan (knowledge creation and sharing, evidence-based scientific advice, data tools and techniques, and Training conferences and workshops. A presentation of the SIHD objectives under each of the pillars was provided. SIHD will hold virtual meetings and utilize the SIHD Forum in coming months to complete the update of the Roadmap this year.

Questions/comments:

The ASG Chair encouraged more interaction with the aquaculture side of ICES. Since more than 50% of our seafood comes from aquaculture, it needs to be a big part of SIHD. The Working Group on Social and Economic Dimensions of Aquaculture (WGSEDA) has been doing work on indicators. For the aquaculture overviews the economic and social part was a bit of a struggle, so there is a great opportunity to put some of this into practice and show what economics and aquaculture should look like in an overview. The SIHD Chairs agreed that aquaculture should be part of the SIHD focus. Recruiting an additional chair within the aquaculture area could be one step toward better integration.

Action: ASG Chairs (incoming and outgoing) and SIHD Chairs will schedule a meeting to develop better integration between aquaculture and human dimensions.

6.3 Strategic Initiative on the Integration of Early Career Scientists (SIECS)

Amanda Schadeberg and Fedor Lischenko, with reference to Doc 9.3-1 and on behalf of the third Chair, Alina Wieczorek and the members of the Strategic Initiative, gave an update on the newly established Strategic Initiative on the Integration of Early Career Scientists (SIECS). This Strategic Initiative was initiated after invitation of SCICOM Chair Jörn Schmidt in March 2021, where 23 early career scientists (ECS) from 15 different countries had their first scoping meeting to discuss the issues faced by ECS who join the ICES community. This led to the resolution that was approved in early July 2021.

The overall aims of SIECS were presented:

- Support (scientific work of ICES WGs)
- Integration (of ECS knowledge and expertise into ICES activities - not tokens!)
- Interdisciplinarity (SIECS group is interdisciplinary by design)
- Empowerment (of ECS in ICES institution by given them tools and platforms to further their contributions)
- Connections (of ECS to one another and to other experts)

- Stand for (provision of equal opportunities and support for diverse ECS)

The activities and ToRs of SIIECS can be loosely divided into two domains: 1) Outward-facing (raise the profile and accessibility of ICES for marine ECS) and 2) inward-facing (improve the inclusion of ECS in ICES and help ECS contribute to the overall goals of the organization).

An overview of the benefits for both ECS and for ICES was given. The SIIECS is a platform for networking, collaborations, the way of getting new contacts, friendships and access to the ICES structure. For ICES, the SIIECS can offer new perspectives on scientific questions, fresh ideas for the organization and its activities, resource for science communication and most importantly, recruitment of upcoming experts.

The SIIECS has three chairs and a core group of 15–20 ToR leaders, who share the major responsibilities. General members of SIIECS is a larger pool of ECS who participate in and benefit from SIIECS activities and/or contribute to ToRs on an ad-hoc basis.

SIIECS have already made several early steps: presented ICES and SIIECS at VECOPs Days (ToR a); connected with leaders of OYSTER, PICES and ECOPs (ToR b); participated in DE&I network session at ASC 2021 (ToR c); proposed ECS keynote speaker for ICES ASC 2022 (ToR d); proposed ECS and ICES WG member networking session for ASC 2022 (ToR d); created directory of ECS members (research interests and WG membership) to look for potential collaborations (ToR d); and made a call for new members.

Moving forward, the Strategic Initiative will involve the new ToR leaders recruited in September 2021 and assign leaders to specific ToR. From there, they will continue with their ToR activities, such as producing informative material for ECS to understand the ICES structure and how to become involved; initiating joint ECS-lead projects, publications, and collaborations; and collect and collate data on ECS representation in ICES.

During the discussion, the Committee congratulated the chairs and members for already doing a great job, despite of this being a newly established strategic initiative.

6.3.1 SIIECS proposal for ECS keynote

SCICOM was requested to approve a proposal for an Early Career Scientist (ECS) keynote for the ICES ASC 2022 and every ASC thereafter. Alina Wiecek presented the rationale for the proposal, as well as a keynote speech format and content. This also includes a mentorship by former ICES keynote speaker to prepare the ECS for the keynote speech. The nomination and selection process was outlined.

SCICOM welcomed the proposal from SIIECS and suggested that the ECS keynote does not need to follow the same structure as traditional keynotes. SCICOM also suggested to look into possible avenues for mentorship, both for and from ECS.

Decision: SCICOM accepted the proposal and agreed that the ECS keynote will replace one of the three traditional keynote time slots at the ASC in Dublin and every ASC thereafter. A pilot process will be initiated that will be evaluated by the ASC subgroup in 2022.

7 SCICOM Operational Groups and interactions between Operational Groups and ICES Secretariat

7.1 ICES Training Group

Jan Jaap Poos (Chair of ICES Training Group) gave an update from the ICES Training Group with reference to Document 10.1-1. Training courses were held successfully this past year with Katla Björnsdóttir leading the coordination of the courses. All of the courses moved online due to COVID-19 and as a result not all courses were held. Five courses were successfully held from September 2020-2021. The Scientific writing and publishing for marine scientists, led by Howard Bowman, was a new and very popular course.

Five courses are planned for 2021–2022 with the Introduction to stock assessment course having exceeded the threshold for participation. While, the Introduction to tag-recapture campaigns course has shown low interest and may be cancelled due to lack of participation. The ICES Secretariat is responsible for the broad promotion of training courses in newsletters, webpages, specific expert groups and to the ICES community. National representatives to SCICOM and ACOM are encouraged to disseminate information about ICES training courses in their own organisations.

The TG's role is to evaluate, develop and implement a strategy for the ICES Training Programme. A survey was sent to all participants in training courses from the last 5 years and these results will help to evaluate the strategy thus far. The results show that the majority of participants are active/past members in ICES expert groups, and a third of people are from outside the ICES network. The respondents indicated that seeing different perspectives and techniques, and networking with people from different countries, were the most important benefits of ICES courses. If online courses continue, then the networking aspect of the training courses will suffer. There has also been a rise in requests for courses in programming, i.e. R.

Currently, participation selection is based on "first come, first served" basis, which also results in WG members not being able to enter the course first time around. There is some discussion on whether the participant selection process should be changed. However, the current system is preferred as the benefits outweigh the drawbacks and going forward the TG will ensure that participants that are turned down get early notification when courses return.

Jan Jaap Poos will finish his term and Anders Nielsen has been suggested as the nominee for new TG chair. The SCICOM chair thanked the TG chair for all his efforts.

Comments/Discussion

What is the economic model for online courses and has the budget suffered? The course fees normally go towards the per diem for instructors for their time and travel. With online courses, the TG is able to run the course even if the participation is low as there are no travel fees, allowing for more courses throughout the year.

Decision: Anders Nielsen was approved as new Chair of Training Group.
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7.2 ICES Science Impact and Publication Group

Nils Olav Handegaard (SIPG Chair) and Ruth Anderson (ICES Editor) presented agenda item 10.2 on the new library project and updates regarding ICES publications, with reference to Document 10.2-1.

New library

In 2020 SCICOM approved a new library system, and a commercial platform was chosen. Current work consists of coordinating the structure of the new library and testing different configurations. Metadata within the current library system is being cleaned and completed, in advance of content migration and a soft system launch in November 2021. The full release of the new library system will follow shortly after, but dates are not yet confirmed. There will be a full presentation when launched, including at WGCHAIRS.

Some things to expect in the new system include a simplified and more effective search function (in addition to indexing by search engines), a versioning function, an in-built PDF reader, citation tracking and altmetrics, and better keyword functionality. External publications related to Expert Groups will also be accessible, with an added upload function for the authors.

Historical publications

There has been work on the ICES historical publications, with the aim of having all contents available online and searchable. SIPG has prioritised these publications, and the work of digitising them has already been started by ICES Editorial office. To date, all CRR issues have now been digitised, in time for the series' 60th anniversary in 2022.

Action: Request to SCICOM: An appeal is made for any digitised ICES historical publications currently on institution repositories to be brought to the attention of the Editorial Office.

Publication series (in-house and external)

All publication series are healthy, with a good balance of published, in progress, and proposed publications. There are 4 peer-reviewed series in-house, 1 external publication (ICES Journal of Marine Science) and several other publications from advice, science and data.

ICES Business Reports

New series launched in January 2021. It is a sister series to ICES Scientific Reports, with a procedural rather than scientific focus.

General updates (CC BY 4.0 license, disclaimer text)

New licence (CC-BY 4.0) and disclaimer text implemented as of January 2021; author guidelines updated to reflect resolutions; updates to ICES publications website.

Questions:

Will we be making a bibliometrics and Altmetrics overview available – SIPG chair: we will get back to it when the library is launched and we have a good overview of the options and functionalities.

7.3 ICES Data and Information Group

Sjur Ringheim Lid (DIG Chair) presented an update from the ICES Data and Information Group with reference to Document 10.3-1.

Hosting datasets and visualisations. The first step has been to develop a data profiling tool, and it is now being used as part of the decision process for requests to ICES for hosting datasets and services. The online form is very straightforward to use, with multiple questions to be filled out.

Data preservation plan. The accreditation of the ICES Data Center as a Core Trust Seal (CTS) data center identified the lack of a coherent data preservation plan. DIG has started the process of creating such a plan and a first draft is scheduled for the May 2022 DIG meeting, and a final version planned for SCICOM September 2022.

Oceanographic data. From the 1st of July 2021 data delivery of oceanographic data to ICES has to be made using one of two formats where one of them is the new Oceanographic Data format. This date marks the end of a time where data delivery to ICES could be made in any documented format for data submission. The format is quite similar to ODV, and you can read more on [this page](#).

ICES Data Portal. A new version of the ICES Data Portal will be made available for the public by the end of September. Beta testing of the new portal was performed by DIG during their annual meeting. It replaces the ecosystem data portal. Read more here:

Data licensing and ICES Data Policy. Endorsed by SCICOM in March and will be tabled for approval for the Council meeting in October 2021.

8 Subgroups

8.1 ACOM/SCICOM EBM Subgroup

Debbi Pedreschi and Marie-Julie Roux, (Chairs of the ACOM/SCICOM EBM group), with reference to Document 11.1, the report of the joint ACOM/SCICOM group on EBM, “ICES Framework for Ecosystem-informed Science and Advice”, presented the ToR of the subgroup and the roles and commitments of ICES with regards to ecosystem-based management (EBM). This subgroup identified that to fulfil their ToR, they needed to have clear operational definitions, a common direction and a flexible approach to facilitate iterative and incremental improvements to better inform EBM. The group identified a number of current weak points in the process from conventional science and advice. The group then outlined their vision of a unified ecosystem-informed science and advice that includes both the natural and social science realms. Looking ahead, the subgroup has suggested two key elements for a common direction: (1) A system of indicators for knowledge development and integration for consolidation of the evidence-based in support of EBM, and (2) A risk-based approach for operationalising indicators into advice for the implementation of the evidence-base for EBM into advice products. Collectively, these will shape a framework for ecosystem informed science and advice that builds on existing practice. Further details and the potential benefits of this framework are available in the SCICOM presentation and working document, including a number of examples outlining how the framework can be operationalized by a number of ICES expert groups using a spectrum of data types that are qualitative, semi-quantitative and quantitative. The subgroup discussed these ideas to a number of ICES groups including WGECON, WGBIODIV, WGSOCIAL, WGECON and others, and has received positive feedback to date.

Two SCICOM members commented that the progress on this complex topic has been excellent. One SIHD Chair noted that NOAA utilizes a risk analysis to develop a common framework, but noted that these types of analyses require a cautious approach going forward with regard to socio-economic components to ensure that they capture the key objectives and complexity of differing values of the community. The DSTSG Chair commented that the architecture presented for EBM addressed the variety of data types well and could benefit from further discussions to ensure good integration of the data with the rest of the ICES network. Additional feedback from SCICOM is also welcomed.

Decision: The framework was approved by SCICOM.
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8.2 SCICOM Oceanography Subgroup

Johannes Karstensen (Subgroup Chair and SCICOM Alternate), with reference to Document 11.2-1, discussed how ICES is making efforts to better engage with oceanographers and align our common objectives. Since the last SCICOM meeting, the subgroup has conducted bibliometric analysis and working group meeting participations to assess value of for example the IROC (ICES Report on Ocean and Climate) prepared by the WGOH and portal, temporal evolution of citations or keyword search (WGOH, WGOOFE). The investigations of the subgroup reveal that a better understanding of user needs and having a stakeholder dialogue is a prerequisite for the further operations of the subgroup. The SCICOM subgroup recommends a four stage process to proceed in order to develop a strategy for better engagement of oceanographers: (1) assessment

of ICES and oceanography (nearly done), (2) assessment of ICES internal oceanography groups to summarize stakeholder requirements and end user needs (November 2021), (3) individual interviews with steering group chairs to assess the user perspective and document positions and expectations of steering groups and working groups (1st quarter 2022), and (4) summary and conclusion to report on user dialogue, oceanography science and data product update (Sept 2022).

Lastly, some carry over actions from the last SCICOM meeting were noted as in progress: (1) The subgroup leaders and WGOH will give a presentation at one of the monthly ASG webinars on what oceanography can do for aquaculture, and (2) A potential pilot activity was identified to investigate how to engage the community working on the Digital Twin Ocean; this will be discussed with WGOFE and other potential users.

During the discussion, subgroup chair Diego Alvarez commented that there is room for better integration of oceanographic information in advice products such as the ecosystem overviews and the opportunity to build collaborations with some of the ICES expert groups that are focused on methodology. EPDSG Chair commented that this would also benefit the expert groups that are part of EPDSG to assist with new ways forward with products that better integrate oceanography.

8.3 Bureau–Council sub-group on COVID-19

Paul Connolly (ICES Vice-President) presented the results of the Bureau-Council sub-group on COVID-19. Seven recommendations were identified and presented by the group for a post-COVID-19 era in ICES, detailed in *Working Document 11.3.1* with implementing body and implementation costs. Delegates from member countries were consistent in their responses, identifying similar issues and changes that need to be implemented in the future.

It should be clear that there might be some follow-up costs besides the ones estimated in *Working Document 11.3.1*, for example for digital implementation as we move forward. Delegates from ICES Member Countries should be included and kept informed about the whole process of implementing the recommendations. Working groups: A project-based approach should be considered in the future instead of one big annual meeting, where deliverables are clearly identified. There are many different ways how working groups can be run. Most chairs are not aware how other groups operate. Providing these different operational models to WGs might be useful in the future to select the most optimal model.

With regards to zero emissions and online meetings, both the positives and negatives should be identified when considering moving all meetings online in a post-COVID-19 world.

Paul Connolly said that the debate and changes need to start now, even if we do not have all the answers yet. We can always come back to the mentioned issues and re-evaluate them, depending on the needs of ICES. For each recommendation, there is a training component involved: it has to be ensured that training is provided before the successful implementation of the proposed changes. It should also be identified what is still required to be held in a physical form in the future.

1. Before the recommendations and related costs are evaluated by the Council, ICES Community should review it and provide further input.
2. ICES Community feedback should then be incorporated into the Draft Report (Ver 7).
3. Bureau to support Final Draft Report (Ver 7) – Submit to October Council for approval.
4. If approved, implementation should start in late 2021.

9 Science and Advice

9.1 Update from Advice

Mark Dickey-Collas (ACOM Chair) provided an update from advice, informing SCICOM of advice developments over last 12 months, including ACOM vice-chair news and challenges to advice.

9.2 Ecosystem, Fisheries and Aquaculture Overviews

A general summary of the advice Overview products was provided by Henn Ojaveer (ACOM Vice-Chair):

- (1) Fisheries Overviews and Ecosystem Overviews are published for most ecoregions and the first Aquaculture Overview will be published this year,
- (2) Operational groups including members from ACOM, SCICOM, and the Secretariat have been established to help with coordination of work,
- (3) Updated technical guidelines were published this year for the Ecosystem Overviews, an advanced draft is in preparation for the Fisheries Overviews, and an early draft from the Aquaculture Overviews has been written.
- (4) Stakeholder engagement from MIRIA and MIACO meetings has been considered for the Fisheries and Ecosystem Overviews.
- (5) Testing of the data profiling tool has been piloted for the Ecosystem Overviews (and discussed for the Aquaculture Overviews and Fisheries Overviews) to aid experts in providing more details as we aim for better transparency of data sources and analyses that are part of advice products.

Ecosystem Overviews progress in the past year

- New Ecosystem Overview in the Central Arctic Ocean
- Full revision of Ecosystem Overviews for the Norwegian Sea and Celtic Seas (this latter overview is based on the new technical guidelines)
- Pipeline for new products to include in the Ecosystem Overviews has evaluated and accepted two new products: fishing ports and communities and vulnerable marine ecosystems

Action: SCICOM members were invited to provide input for advancing WKEO3 priorities focused on productivity changes and food web modelling.

Fisheries Overviews progress in the past year

- New Fisheries Overview for the Faroes ecoregion
- General updates will be made for all figures using the ICES and STECF databases
- The Workshop on Fisheries Overviews (WKFO) took in MIRIA and MIACO feedback, proposed a long-term strategy, suggested revisions to the content, and advancing FAIR data use and addressing other data issues
- Major suggestions are also being addressed including establishing an operational group (completed), finalising draft technical guidelines for submission to Advice Drafting Group on Fisheries Overviews (almost completed), and replacement of the tactical mixed fisheries advice with a short summary (ACOM approval in place).

A few discussion points were raised. The SCICOM chair asked whether FAO datasets are comparable to datasets that are currently used for the Fisheries Overviews. ACOM chair replied that the experts collate the catch statistics and some cases use the FAO statistics, but they are not always comparable.

Aquaculture Overviews progress in the past year

- The very first Aquaculture Overview will be released in Dec 2021 for the Norwegian Sea ecoregion.
- In 2022, Aquaculture Overviews are planned for the Celtic Seas and Faroes ecoregions. Work has already started to identify key contributors and data sources.

The ASG Chair asked if Aquaculture Overviews were discussed with stakeholders at the MIRIA and MIACO meetings. One ACOM Vice-Chair said that a survey for feedback on the other types of overviews was requested of the meeting participants, but this did not include the Aquaculture Overviews. The ASG Chair suggested continuing the discussion with ACOM to find appropriate avenues for discussion with relevant stakeholders. ACOM Chair also noted that some of these discussions about the Aquaculture Overviews have been occurring with DGMARE.

9.3 Viewpoints

Viewpoints allow ICES to highlight potential management and societal implications of maturing science in our network. They are pro bono advice approved by ACOM that are drafted by experts in the ICES network (usually with contributions from one or two groups).

A summary of the Viewpoints is provided in the table below, with 2 already published, 1 to be published this year, and a few in the planning. The Viewpoints can be located under the [latest advice](#) by year (search for keyword “Viewpoint”).

Topic	Contact	Status
Vessel biofouling	Bella Galil	Published in 2019.
Ship scrubbers	Ida-Maja Hassellöv	Published in 2020.
Impact of chemical pollution	Ketil Hylland	Background science report under review. Planned release in 2021.
Deep sea mining	Laura Robson	Proposal under planning.
Application of DNA based approaches with the EU landing obligation	Jann Martinsohn	Proposal under planning.
Marine litter	Andy Booth	No activity.
Consequences of large fish stocks	Anna Rindorf	No activity.
Emerging marine and aquatic pathogens	Ryan Carnegie	To be dropped from the list in the current arrangement, as no progress.
Legislation on chemical contaminants and toxins in seafood	Bavo Dewitte	Rejected, as focussed on legal issues and not consistent with the purpose of ICES viewpoints.

HAPISG Chair noted that the Working Group on Marine Litter (WGML) is drafting their new resolution and have been asked if they will consider putting in a viewpoint as a deliverable in their next term. This should be discussed further at the SCICOM-ACOM resolution review meeting in November for approval of the 2022 resolutions.

Viewpoint topics are discussed with WGCHAIRS, and any groups or other members of the ICES community are welcome to propose new ideas. A template provided by ACOM should be filled in and sent to ACOM leadership for comments and evaluation of suitability. The ACOM Vice-Chair can provide examples of the completed template for the already published Viewpoints and is available for discussions to help the development of topics for potential Viewpoints.

9.4 Special advice requests being addressed by ICES

Mark Dickey-Collas (ACOM Chair) went over the special advice request by type: fisheries and fisheries management, fisheries impact and ecosystems, and conservation management and objectives, the special requests themselves and the science challenges.

Questions/Comments

Requests on Management Strategy Evaluation (MSE) are currently on single stocks. WKIRISH has shown how MSE can be applied on multispecies and ecosystem contexts, but requests need to come from advice requesters.

One SCICOM member expressed curiosity about special requests on use of genetics for monitoring targets. This is related to the identification of fish species from Atlantic and mislabelling.

9.5 Benchmark Oversight Group

Mark Dickey-Collas (ACOM Chair) introduced the Benchmark Oversight Group (BOG), and its science developments in support of benchmarks, including development of benchmarks for non-fishing opportunities advice (e.g VMEs and bycatch of PETS), inclusion of ecosystem aspects in advice on fishing opportunities (e.g WKIRISH), new and evolved fisheries modelling, future direction in ensemble approaches, and the role of Methods Working Group (WGMG).

9.6 EU request on the trade-off between seafloor disturbance and fisheries landing

Eugene Nixon (ACOM Vice-Chair) presented on the requests and the stakeholder and technical workshops in answering the EU request this year. He gave an oversight of the advice itself and the conclusions reached.

Questions

The Technical Group on seabed habitats and sea-floor integrity (TG Seabed) is involved in this work. All MSFD-related requests are passed through the appropriate mechanisms within WGEAS of DG Env and TG seabed. Also, the whole process relates to creating a conversation between DG Env and DG Mare in terms of conservation objectives to reach good environmental status in some of most trawled seabeds in the world.

9.7 Update from Workshop on Stakeholder Engagement Strategy

Alan Haynie and Vera Köpsel (Chairs of WKSHOES) provided an overview of the WKSHOES workshop held in June 2021; much of the presentation material is described in depth in the [workshop report](#). The meeting built upon a recent ICES position paper by Ballesteros and Dickey-

Collas (2020) and a request from Council to develop a formal ICES Stakeholder Engagement Strategy. In advance of the workshop, a survey of Expert Group chairs was conducted to assess current stakeholder engagement in ICES. The group also looked at stakeholder engagement strategies of other organizations, and the presentation highlighted two good examples from UNEP (2015) and the IPBES Stakeholder Strategy. Workshop discussions opened with identifying who is a stakeholder, their roles, aim, and focus including their relationship with science and advice.

WKSHOES developed a set of principles that should guide stakeholder engagement in ICES. Two key statements were developed by the group to elaborate on principles in the Ballesteros and Dickey-Collas (2020) paper: (1) Stakeholder engagement is an essential element of ICES' work, and (2) Regular monitoring, evaluation and adaptation of the engagement processes within ICES should ensure institutional learning and the continued improvement of ICES stakeholder engagement process.

The workshop includes a proposed outline for the stakeholder engagement strategy, as well as a discussion of gaps, risks, and opportunities for stakeholder growth, inclusion and engagement. Further suggestions for monitoring stakeholder engagement processes and activities were also developed by the workshop participants.

Four main recommendations from WKSHOES are:

- In order to both complete the development of the ICES Stakeholder Engagement Strategy and conduct successful stakeholder engagement about the Strategy, a suite of communication activities is needed that should best be coordinated from a central contact point within ICES.
- After ACOM/SCICOM draft the Strategy and obtain input from the ICES Council, a diversity of stakeholders should be invited to comment on the WKSHOES report and subsequently ICES should hold an event with stakeholders in early 2022 to agree on the contents of the strategy and how it will be implemented.
- A future Expert Group should address the ongoing need to teach stakeholder engagement methods within the ICES network.
- ICES should take a number of Communications actions to effectively implement the Strategy.

Looking ahead, a stakeholder engagement drafting group of ACOM/SCICOM chairs, Secretariat, and WKSHOES chairs will be developed with aim for first review at ACOM/SCICOM March 2022 meetings and adoption by the end of 2022.

The discussion was brief. The ASG Chair, said that aquaculture stakeholders were polled when developing the Aquaculture Overviews content and this group is still active and could be brought into these discussions. SCICOM chair stated this list will be valuable at later stages once the strategy is developed. SCICOM chair also noted that there are multiple dimensions and expertise needed for stakeholder engagement and therefore some training may be needed.

Decision: SCICOM approved the timeline and next steps as outlined in the slide below.
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Timeline and Planned Next Steps



- Take comments over coming months
- Discuss with ACOM in December
- Consultations with stakeholder organisations and observers on the WKSHOES report, with discussions at MIACO and MIRIA 2022.
- A stakeholder engagement strategy drafting group take the findings of WKSHOES and draft the strategy. Draft to be ready by January 2022. The group consists of:
 - ACOM and SCICOM Chairs
 - 1 representative from ACOM and 1 from SCICOM
[Spain has already offered Marta Ballesteros as the potential representative of ACOM, SCICOM is yet to nominate a representative]
 - Two Chairs of WKSHOES – Alan Haynie and Vera Köpsel
 - Lotte and Wojciech.
- The draft engagement strategy to be discussed at ACOM and SCICOM March 2022.
- The draft be presented to ICES Bureau for comment.
- The draft to go out to consultation to requesters of advice and stakeholders April 2022, with feedback requested by June 2022.
- The stakeholder engagement strategy drafting group addresses feedback from consultations and revises as appropriate.
- SCICOM and ACOM address the revised draft in Sept 2022, as does Bureau.
- The draft strategy be presented to ICES Council October 2022, hopefully for approval.

10 Science Cooperation

10.1 PICES cooperation

Head of Science Support presented the ICES-PICES joint activities. Cooperation between ICES and PICES is flourishing. There are currently 5 Joint ICES/PICES working groups. At the ICES ASC 2021, PICES organised two sessions and PICES executive secretary, deputy executive secretary and science board chair have been participating in the SCICOM September 2021 meeting. ICES 1st Vice President and SCICOM chair will be attending the PICES annual meeting in October as observers.

Four symposia are co-organised between ICES and PICES. The Joint PICES Study Group and ICES Council Steering Committee to plan participation in the UN Decade of Ocean Science for Sustainable Development has several initiatives fostering productive collaboration between the two organisations. This includes the Sustainability of Marine Ecosystems Through Global Knowledge Networks (SMARTNET) and ICES/PICES UN Decade programme

Vera Trainer, Science Board Chair of PICES, introduced herself and thanked ICES for the invitation to the SCICOM meeting. Sanae Chiba, PICES Executive Secretary, commended the launch of SMARTNET and emphasised that the initiative also supports opportunities for supporting early career scientists, working with Small Island States (SIDs) and the empowerment of women. SCICOM chair thanked PICES colleagues for joining and for their cooperation.

10.2 Arctic research

The SCICOM chair presented three dimensions of cooperation on arctic research. These are institutional cooperation, science cooperation and products. ICES participated in two Arctic Council meetings in 2021, as well as the 3rd Arctic Science Ministerial meeting, contributing to the presentations and reports.

At the second meeting on the Implementation of the Agreement on Enhancing International Arctic Science Cooperation, the members of the Arctic Council agreed to enhancing international arctic science cooperation. The Arctic Action Plan outlines research, organisational and uptake challenges and actions for the decade ahead. This includes a lot of common ground for ICES' other decade activities. ICES also co-sponsored the International Symposium on Plastics in the Arctic and Sub-arctic Region, as well as facilitating the work of the Joint ICES/PICES Working Group on Integrated Ecosystem Assessment of the Northern Bering Sea-Chukchi Sea (WGIEANS-CS). Notably, this is the first expert group to include a ToR on inclusion of indigenous and traditional knowledge.

The final dimension covers products on Arctic research to be released in the near future. This includes the Cooperative Research Report produced by the ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment for the Central Arctic Ocean is currently under peer review, as well as the release of the Arctic Ocean Ecosystem Overview to be released in December 2021.

The SCICOM chair noted the report on ICES member countries activities on Arctic is an annex to the March SCICOM report in 2018.

10.3 ICES co-sponsored symposia 2021–2023

The symposium coordinator presented the forthcoming symposia for 2021, 2022, and 2023, highlighting that four co-sponsored symposia have been endorsed as UNDOSS activities. ICES will be contributing to

multiple sessions at the Ocean Sciences Meeting, 27 February – 4 March 2022 and asked SCICOM for information on any other sessions that the ICES community will be contributing to.

There are three anticipated symposium resolutions for 2023 and 2024. The announcement for resolution submissions will be made in the beginning of December and collated for approval from SCICOM at the March 2022 meeting. The ICES Secretariat has enhanced the [ICES Activities Dashboard](#) to include a new tab for conferences, symposia, and training; 2022 expert group meeting activities, filters for ICES and EU member countries to expert group statistics page; and currently exploring options for improving the map module in the dashboard.

10.4 UN Decade of Ocean Science

The SCICOM chair outlined the activities related to the UN Decade of Ocean Science. The Joint ICES/PICES UN Decade programme, SMARTNET has been endorsed. There have been a number of discussions with IOC and currently reaching out to UNDOS programmes to see which activities can be brought forward. The programme will support and leverage ICES and PICES member countries' activities related to UNDOS and emphasise areas of mutual research interest. If other areas of mutual interest arise, these will also be included in the programme. This will also incorporate strategies to facilitate UNDOS cross-cutting inclusivity themes.

Some of the initial IPOD activities were highlighted: identification of partner organisations to reach out for initial planning; participation in UNDOS laboratory on a Productive Ocean; Participation in UNDOS communities of Practice and planning for joint ICES PICES 2023 Annual meeting as a SMARTNET activity.

Part of the identification of partner organisations include identifying targeted actions to identify common areas of interest, building on current partnerships and affiliate countries, and establishing workshops, working groups and symposia as seen appropriate.

UNDOS Laboratories are activities that have been proposed by Germany, as additional online events that happen from now until the next UN Decade event in 2022. These events can be used to reach out to other organisations and a lot of countries are already engaged in developing the core events. If SCICOM is aware of any of these outreach activities, the SCICOM chair asked SCICOM to bring them forward.

The Communities of Practice are a mechanism to bring in partners that are not directly contributing to activities such as SMARTNET. It is intended as an informal structure to facilitate connections between partners and are split into thematic and geographic focus. The CoPs may be a way to bring in other national activities.

SCICOM chair reminded all member countries or institutes to bring forward any activities planned for the Ocean Decade Laboratories SMARTNET. ICES received a number of national contact points and activities already, but any further information on national UNDOS activities is welcome.

Comments/discussion:

How can an institute join ICES as a partner? There is a process for how an institute or country can become an affiliate partner, which is available on the ICES webpage.

NOAA has a parallel group that discusses how to tie NOAA activities to IPOD and UNDOS projects.

In many ways we want to link to the Global South, what kind of activities are happening in that realm? We are linking to affiliate institutes with activities with a more global scope. The idea is to reach out and see if there is an interest in contributing to existing groups with a more global scope or create new groups that can bring in experts from the global south. IPOD is also looking into linking to member countries efforts that have a global scope.

11 Theme and Network Session proposals

Francis O’Beirn (Marine Institute, Ireland) presented the Theme and Network Session proposals for ASC 2022 in Dublin.

The Theme and Network Selection Group mostly comprised of SCICOM members. Initially, 37 Theme Session and 6 Network Session proposals were submitted. 16 Theme Sessions and 6 (no. 5 and 6 are carry-overs from ASC 2021) Network Sessions were selected for final approval. The selection process was subject to in-depth discussions before making up the final list of proposals. The results are presented in *Working Document 14.3*. The proposed sessions cover a broad range of topics. Session 2 was suggested to be better suited for a network session format. There are two pre-determined sessions besides the 16 selected ones, one by the host country (likely an aquaculture-related topic in 2022) and a “Contributed papers” Theme Session. “Contributed papers” theme session is also suitable for people whose topic is not covered in other sessions. It was noted that the “Contributed papers”, Theme Session R at ASC 2021 had a lot of contributing ECS with a broad range of topics.

Question/Comments:

Is there a potential for network sessions to be longer? *Answer:* It could be possible if needed. The setup is the same as for the physical and then we try to accommodate to the online part.

Hybrid model for ASC 2022: the setup will mostly depend on technological capabilities and the conference centre that is going to host the conference. The conference app Whova should be suitable for the hybrid model.

Decision: SCICOM approved the list of proposed Theme Sessions and Network Sessions and the proposed merged sessions (Session 37 and 2; Session 15 and 9 to be merged). The ASC subgroup will work on developing a way forward with the hybrid format. The conveners should be informed about the details of the hybrid format in a timely manner, since a hybrid model requires a different approach in preparation.

12 Science Cooperation

Agenda item 13 was postponed to the extraordinary SCICOM meeting on 29 September, see minutes from this meeting in Annex 2.

13 SCICOM members' open forum and reflections on important topics

Several topics were brought up and discussed. Main points for each are summarized below:

Potential for a new group on carbon stores and sinks, and conservation of habitats that stores carbon. ICES will be challenged with requests in this direction in coming years.

- One source for the idea is Sala *et al.* paper – carbon in sediments that can be returned to the water column. It is pointed out that there are a lot of critical assumptions in the paper and open questions.
- It is raised that part of this topic might already be covered by WGONCE. A check for overlaps will be needed.
- Importance for governments is brought up – e.g. questions are already coming on this topic from UK parliament. Closure of carbon storage areas can impact fisheries.
- Blue carbon is also highlighted as an important topic.
- MPA is also highlighted as a topic to consider in a changing climate. Attracting conservation scientists to ICES will be worthwhile to reconcile objectives.

Presentation of a recent workshop in Canada, which reached out to scientists and biologists across the country so they could learn about ICES. SCICOM and ACOM Charis attended. The aim was to bring awareness to newly hired people, and increase uptake when new groups are formed or groups are recruiting. It was well received.

- Parallel initiatives have also been carried out or a planned in other countries and are worthwhile.

Should ICES start to give views on ways to cut carbon emissions by research vessels? E.g. what propulsion systems to use, ship design, etc.

- Many countries/institutes currently planning for or are building new research vessels
- Bureau has brought this up as part of the 0-carbon initiative.
- Agreement that we need to bring in the expertise, and recommendation that this be followed up by DTSG.
- Some information has been gathered on carbon emissions by research vessels and can be seen here: <https://doi.org/10.7489/12261-1>

Proposal of a 2–3-day workshop on the challenges facing mostly whitefish demersal fisheries and managing sustainable fisheries in the southern extent area of cod. Background for the proposal is the trouble observed with cod in its southern extent of its distribution – eastern and western Baltic Sea, North Sea, and Celtic Sea fisheries have almost 0 advice catch. In addition, there are a number of spatial issues in relation to mixed fisheries for white-fish bottom-trawl fisheries across the same regions. This should use the WK on mackerel as a model, which successfully brought together researchers, stakeholder and industry, produced a number of initiatives and funding opportunities, and drafted a research roadmap.

- Last cod WK was in 2003.
- Idea is considered very timely. Similar issues have been seen with cod on the other side of the Atlantic. Haddock is exploding in contrast.
- Cod vs whitefish focus group

Issue is brought up on how to become more attractive to academic expert and increase ICES participation.

- One big issue is that working as an ICES Chair does not count for tenure track. ICES should reach out to universities at a higher level, to showcase the value of ICES participation and encourage its inclusion as service work in tenure track.
- More and more NGOs want to fund projects, but require societal benefits. Leveraging ICES could work there.
- ECS initiative also links to this
- When applying for funding, links to ICES help to prove the societal relevance of the proposal
- Reminder is given that there has been some discussion in the past SCICOM about engaging academics and a list of suggestions already was put together.
- Other initiatives are also highlighted.

14 Update from Awards Committee

Carl O'Brien (Awards Committee Chair) gave a brief update from Awards Committee.

The membership consists of a Chair appointed by Council (Carl O'Brien) and member from among Council members (Pierre Petitgas), and three members from among SCICOM members (Ellen Kenchington, Antonina dos Santos, and Rafael Gonzales-Quiros) for a maximum of two three-year terms. SCICOM was informed that all three members have agreed to stay on for one or two more years to complete their six-year terms.

<p>Action: SCICOM was requested to nominate a new member for the Awards Committee as from 1 January 2023.</p>
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This year the Outstanding Achievement Award was presented to David Reid, Marine Institute, Ireland. Thanks were extended to SCICOM Chair, SCICOM and Secretariat for their support during the nomination process and the virtual award ceremony.

15 Update from Science Department

Wojciech Wawrzynski (Head of Science Department) with reference to Document 18.1 gave an update from the Science Department, summarizing the scope, scale and impact of the recent support services provided by the ICES Secretariat.

16 Implementation of Science Plan

Jörn Schmidt (SCICOM Chair) with reference to Document 19.1-1 presented an update on the progress on the implementation of the Science Plan. Part of the implementation depends on the development of the resolutions database (linkage of terms of reference to science priority areas), which is still in progress. Other than that, the implementation process is on track. Details are given in the annual SCICOM Progress report to Council.

17 SCICOM Annual Report to Council

The SCICOM Chair, with reference to Document 20.1, outlined the structure of the annual progress report to Council and reminded the contributors of the 7 October 2021 deadline.

18 Closing remarks

SCICOM Chair thanked the Steering Group Chairs ending their term by the end of the year for their leadership (Mike Rust and Sarah Bailey), and expressed hope that it would be possible to have an in-person ASC closing with hand-out of award certificates and small tokens of appreciation in person in 2022.

Thanks were extended to all members of SCICOM for their participation, interactions and lively discussion, and to the Secretariat for excellent meeting support.

SCICOM Chair drew everyone's attention to the meeting date of the extraordinary SCICOM meeting (with more time for discussion and approval of one ASC 2022 keynote speaker) scheduled for 29 September, and the Resolutions approval meeting scheduled for 4 November.

19 Dates of next meetings and close

SCICOM Chair announced the dates for the next SCICOM meeting scheduled to take place from Tuesday, 8 March till Thursday, 10 March.

Annex 1: List of participants

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Annex 2: Minutes from extraordinary SCICOM meeting 29 September

An extraordinary meeting of SCICOM was held to cover agenda items 14.1 and 14.2 from the SCICOM September meeting, as well as deciding on the keynote for the ASC 2022 in Ireland.

SCICOM received 9 nominations for keynote speaker. After initial ranking and voting, the selected keynote speaker for the ASC 2022 has been selected. A second candidate has been selected; in case the first candidate will not be able to give the keynote. The SCICOM Chair will contact the candidate to solicit the willingness and availability.

The SCICOM Chair presented agenda item 14.1, Link to national science activities, and 14.2, Increasing international collaboration. The aim is to identify how the existing measures work and to possibly identify additional measure to strengthen international scientific cooperation and create better links to national activities.

The discussion resulted in clear objectives and measures for each of the agenda items, presented in the SCICOM Progress report to Council.

14.1

Objectives

- 1) General dimension:
 - a) Integrating science across scales and disciplines,
 - b) Broaden the scientific discourse.
- 2) National dimension:
 - a) Access to expertise not available within the respective country,
 - b) Discussing science related to and needed for international commitments,
 - c) Facilitate dialogue across different ministries.
- 3) Institutional dimension:
 - a) Connect to a wider range of institutes and universities to support EBM development.
- 4) Individual dimension:
 - a) Build and grow their professional network,
 - b) Enhance skillset and knowledge sharing by collaborating an international setting.

Identified tools and mechanisms for implementation

- 1) National ICES workshops (like BICEpS and other national ICES days):
 - a) Open ICES to more national scientists (including academia and government bodies other than fisheries),
 - b) Facilitate the conversation between national researchers and national policy makers.
- 2) ICES can participate in or offer networking with national research projects on topics of interest:
 - a) ICES issues letter of support to national proposals when it is clear how the projects will interact with expert groups,
 - b) ICES can facilitate interaction between national projects on same topics (e.g., through topical workshops).

14.2

Objectives:

1. Support science collaboration by coordinating with other regional and international organisations, understanding that links to advice need to be considered as part of this process as some organisations may also be advice requestors:
 - a. Engaging in and developing new joint Expert Groups with a number of regional and international organisations,
 - b. Linking efforts where national interest and engagement on a regional or international level are meaningful.
2. Support science collaboration through dialogue with ongoing EU and other international projects:
 - a. Scientists in Expert Groups are often working in international projects which have no formal involvement from ICES (e.g. Secretariat); improved communication and knowledge synthesis across projects can be facilitated through Expert Groups, e.g., topical workshops.

On objective 1: the current cooperation can be strengthened by reaching out to organizations with similar thematic focus and to extend the pool of experts to be able to cover global topics in a more holistic way. Opportunities for further synergies between ICES and other organisations will also be explored through the UN Decade of Ocean Science activities and especially together with PICES through the joint ICES/PICES decade programme SMARTNET.

On objective 2: activities are currently happening on an ad hoc basis and can be strengthened and further developed by developing capacity in the science department, specifically to support coordination and strategic development of projects.

Annex 3: List of SCICOM Actions and Decisions

Action/Decision	Section	Deadline	Responsible
Action: Secretariat will work with the outgoing/incoming HAPISG Chairs to develop more specific guidance for participation in IMO activities but maintain flexibility (for follow up by Secretariat) and to transfer the administrator role of the ICES account at the IMO to the Secretariat by December 2021 (for follow up by Secretariat).	4.5 HAPISG	December 2021	SCICOM Chair/Head of Science Department, HAPISG Chair
WGOH and WGOOFE are looking for optimal ways to establish a connection to fish stock assessment groups. Action: ACOM Chair, Steven Degraer and Patrick Lynch will discuss these issues further.	4.6 EPDSG	March SCICOM meeting	ACOM Chair, Steven Degraer, and Patrick Lynch
Action: ASG Chair and Secretariat to update the guidelines for ASC to reflect the process of the award selection group in a virtual setting.	5.2 ASC Award Selection Group	End February 2022	Lydia Yebra and Secretariat
Action: The ASC group will analyse the comments in detail and take all the good suggestions and feedback on board for next year's ASC. Please send additional reflections and feedback in writing. All feedback will be put on our lessons learned list.	6 Evaluation of ASC 2021	End January 2022	SCICOM Chair
Action: ASG Chairs (incoming and outgoing) and SIHD Chairs will schedule a meeting to develop better integration between aquaculture and human dimensions.	7.2 SIHD	January 2022	ASG Chairs and SIHD Chairs
Decision: SCICOM accepted the proposal and agreed that the ECS keynote will replace one of the three traditional keynote time slots at the ASC in Dublin and every ASC thereafter. A pilot process will be initiated that will be evaluated by the ASC subgroup in 2022.	7.3.1 SIIECS proposal for ECS keynote	-	-
Decision: Anders Nielsen was approved as new Chair of Training Group.	8.1 Training Group	-	-
Action: Request to SCICOM: An appeal is made for any digitised ICES historical publications currently on institution repositories to be brought to the attention of the Editorial Office.	8.2 SIPG	Ongoing	SCICOM members
Decision: The framework was approved by SCICOM.	9.1 ACOM/ SCICOM EBM Sub-group	-	-
Action: SCICOM members were invited to provide input for advancing WKEO3 priorities focused on productivity changes and food web modelling.	10.2 Ecosystem, Fisheries and Aquaculture Overviews	March SCICOM Meeting	SCICOM members
Decision: SCICOM approved the timeline and next steps as outlined.	10.7 Update from WKSHOES	-	-

Action/Decision	Section	Deadline	Responsible
Decision: SCICOM approved the list of proposed Theme Sessions and Network Sessions and the proposed merged sessions (Session 37 and 2; Session 15 and 9 to be merged). The ASC subgroup will work on developing a way forward with the hybrid format. The conveners should be in-formed about the details of the hybrid format in a timely manner, since a hybrid model requires a different approach in preparation.	12 Theme and Network Session proposals	-	-
Action: SCICOM was requested to nominate a new member for the Awards Committee as from 1 January 2023.	15 Update from Awards Committee	September 2022	SCICOM Chair