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An annual report to the ICES Council to describe the development and implementation of the ICES Science Plan

ICES International Council for the Exploration of the Sea

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1 Introduction (SCICOM Chair)

The SCICOM annual progress report reviews the activities of the ICES science structures overarched by the Science Committee (SCICOM). The role of SCICOM is to implement the ICES Science Plan (2014–2108) to enable future marine science that is relevant, credible, dynamic, and responsive in support of the ICES Strategic Plan. The Science Plan is profiled towards the needs of a rapidly changing scientific and policy landscape and has renewed ICES position in the marine science community.

The structural mechanisms that SCICOM utilizes to deliver the Science Plan are:

- Science Steering Groups – the expert groups are organized within steering groups to manage work and deliver the goals of the science vision. The portfolio of steering groups was renewed with the new Science Plan and now contains four science groups and one benchmark group that ensures the transfer of science to advice.
- Strategic Initiatives – are topical and crosscutting to introduce innovative and interdisciplinary thinking. The strategic initiatives include partnerships that strengthen ICES in a global context.
- Operational Groups – are supportive to the scientific needs of the organization and develop data policies, training, publication, and communication strategies and products.
- The Annual Science Conference – a major marine scientific event which enables ICES community to meet and network and new participants to be brought into ICES activities.

This document presents a summary of the establishment and achievements in the first year of the new Science Plan. Reports from SCICOM Steering Groups, Strategic Initiatives and Operational Groups are included as well as advancements in scientific cooperation and the highlights from the Open Sessions at the ASC.

2 Science Development – The ICES Science Plan (SCICOM Chair)

2.1 The Establishment of the ICES Science Plan (2014-2018)

The Science Plan is the essential pillar that demonstrates the quality, value, and uniqueness of ICES as a marine science organization. The main message expressed is that ICES provides a coordinated and objective driven vision that is ambitious, innovative, and which responds to client and societal needs. In the starting year of the Science Plan it has been of major importance in terms of launching and informing about the vision of ICES as a key provider of the required scientific knowledge for marine management.

Integrated ecosystem understanding is an ultimate goal in the Science Plan, which places the Integrated Ecosystem Assessments (IEA) in a strategic position. However, it is necessary to emphasize that the IEAs are supported by a framework of cross-cutting Steering Groups (SSGs) which fulfils the need to understand the ecosystem functions, responses to pressures including human activities, and how to collect the data. The four SSGs that support the science vision are:

- Ecosystem Processes and Dynamics (SSGEPD)
- Ecosystem Pressures and Impacts (SSGEPI)
- Integrated Ecosystem Assessments (SSGIEA)
- Integrated Ecosystem Observation and Monitoring (SSGIEOM)

An additional Steering Group is dedicated to creating a process to coordinate and manage the transfer and application of innovative science into sound, credible, and responsive advice:

- Benchmark Steering Group (BSG)

The framework of Steering Groups was installed in June 2014 and shall ensure a streamlined communication and planning process. To include responsiveness and flexibility on the expert group level, three Steering Groups are under joint auspice of ACOM and SCICOM. The communication is enforced by regular Webex meetings within the Steering Groups as well as the SCICOM Business Group (Steering Group chairs and Strategic Initiative chairs). Strategic communication with ACOM/SCICOM leadership is mainly dealt with in two annual meetings.

2.2 Science Plan Implementation – First Year

The Steering Groups are set up to implement the goals of the Science Plan by following scientific objectives and identifying priority areas. The groups give their individual reports below, and here follows a summary of the main strategies that will lead the way to the successful implementation of the Science Plan.

ICES portfolio of Integrated Ecosystem Assessments (IEAs) that synthesize the ecosystem knowledge has grown to cover six areas: the Baltic Sea (evident in the working group WGIAB), the North Sea (WGINOSE), the North Atlantic Regional Sea (WGNARS), the Western European Shelf Seas (WGEAWESS), the Norwegian Sea (WGINOR) and the Barents Sea (WGIBAR). The established framework of IEAs shows ICES ability to work across ecosystems with different conditions, yet adapt to data availability and different policies, with the purpose of addressing both specific questions and wider issues (see also Council AI 7.3.2).

The consignment of science to the advice process includes the production of Ecosystem Overviews (EO) for the regions included in the IEA framework. The EOs are intended to promote progress towards the delivery of integrated advice where integration refers to (a) taking account of the effects of multiple human pressures on the environment

when developing management advice, (b) accounting for the effects of the most influential environmental and ecosystem processes on advice, and (c) considering multiple objectives. The main aim of EOs is to explain processes linking status to pressures and drivers of the ecosystem, stepping away from classic static "status" reports and instead describing the dynamics of the ecosystem. The target audience for the EOs is ICES (and other) advisors who develop advice on marine or fisheries management and a broader audience of policy developers.

The Ecosystem Overviews will be supported by oceanographic data. Therefore, ICES launched a call for Operational Oceanographic Products (OOPS) with quite a successful response. The submissions ranged from physical oceanography to zooplankton time-series, and most of ICES ecoregions were covered. The objective of the OOPS initiative is to develop relationships with oceanographic product suppliers and create mechanisms to feed these products through to the ICES Data Centre.

Through the new Strategic Plan, SCICOM and ACOM have a stronger cooperation in order to fulfil the commitment of placing ICES advice into an ecosystem context. A deliberate process of turning ecosystem knowledge into advice is created. The benchmarking process has started to break ground with respect to the inclusion of ecosystem knowledge in traditional fish stock assessment. Scientists involved in the ICES Baltic advisory work (in the WGBFAS working group) and integrated ecosystem assessments in the Baltic (WGIAB) have, through a workshop (WKSIBCA), addressed the Baltic cod stock assessments in a wider context. The workshop intended to find relevant ecosystem processes and examine which ecosystem information (related to processes, parameters, and data) could be included in an assessment of the Baltic cod stocks and fisheries. This was done by identifying relevant ecosystem knowledge on changes in cod stock dynamics and management reference points (i.e. especially changes in growth, spatial distribution, and stock mixing). WKSIBCA introduced a pathway on how to develop a traditional assessment into ecosystem-based fish stock advice. Feedback from WKSIBCA already shows fundamental success that can enhance new workshops for other stocks. It is important to make room aside from the traditional benchmarking of fish stock assessments to introduce wider ecosystem knowledge into regular advice processes (further information in Council AI 7.3.3).

ICES are scoping with OSPAR and HELCOM on the science needs for upcoming regional assessments (QSR and HOLAS). ICES science has good potential to become the international platform for setting up MSFD science standards for the monitoring programme and assessing GES regionally because of available methods, surveys, data bases, and because national MSFD procedures are not integrated across countries as of yet. In addition, ACOM and SCICOM are jointly working on an initiative to create proactive advice in relation to the MSFD. A request has been sent out to scope within the science expert groups on where to identify knowledge that can answer key questions in relation to the MSFD. The groups' answers will be collated and given to ACOM for consideration and to start a discussion with potential receivers of advice.

A systematic review of existing surveys has been initiated by ACOM and SCICOM Both committees are proactive in identifying what resources are currently available and what additional resources may be needed and mindful of the current policy context including the new CFP, MSFD, and the ecosystem approach. A resolution is forwarded, led by John Simmonds (Advisory Committee Vice-Chair) and Nils Olav Handegaard (Science Committee, Chair of Integrated Ecosystem Surveys and Monitoring).The end result should be a high-level strategic document that mainly focus on surveys within EU, but also considers the potential to optimize surveys at a broader

international scale (Trans-Atlantic, and with a link to Horizon 2020, e.g., BG 14 proposal) (see also Council AI 7.3.1).

2.3 Development of Performance Measurements

The above achievements are included in an expert group's performance evaluation on the background of the Science Plan's first year , as given in **Annex 1**. This is based on an exercise done by the SCICOM Steering Group chairs during their evaluation on the advancement of the Science Plan during 2014. The goal of the Strategic Plan and the science supporting activity is evaluated using a ranking from 1–5. The result of the evaluation shows that some goals are long term and some are in need of results from ongoing activities and will be implemented at a later stage. However the exercise is useful in highlighting progress and indicating areas in need of attention and action.

2.4 Scientific Cooperation

ICES is a respected and relevant partner in scientific cooperation and shows this by taking the lead in collaborative arrangements.

A recent review of topics of common interest was done by the P\ICES group on Strategic Cooperation. Climate change, ocean acidification, and hypoxia are still of high interest and with potential for synergies. Spatial planning as well as biodiversity issues should be considered in the relevant context in connection with PICES where a renewed road map for joint scientific focal points is under development.

The Baltic Sea Centre, Stockholm University has started a project "DEMOnstration exercise for Integrated Ecosystem Assessment and Advice of Baltic Sea fish stocks". The goal of this project is to develop and evaluate integrated advice for the three main commercial fish stocks in the Baltic Sea, i.e. cod, herring, and sprat. DEMO will demonstrate ways towards the inclusion of multi-species interactions, environmental conditions, bio-economic considerations, and projections of the Baltic Sea into an ecosystem-based fish stock advice and management. DEMO follows the efforts of the ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea (WGIAB). ICES and the Baltic Sea Centre are coordinating the activities of WGIAB and DEMO and foresee that there will be synergetic effects of the two initiatives.

The ICES Arctic action area has been in focus for development of collaboration. A strategic meeting took place with the Protection of the Arctic Marine Environment Working Group (PAME) and Arctic Monitoring and Assessment Programme (AMAP). The result is a process for the further development of IEAs in Arctic waters, beginning with a scoping workshop in 2015 and with the aim of a subsequent working group. ICES continues to have Arctic-related Theme Session at the ASC (2014 Session F). Two Theme Session proposals have been submitted to the ICARP III planning committee:

- Innovative Approaches to Communication for a Changing Arctic (conveners Jörn Schmidt, Stephanie Pfirmann)
- Fisheries in the Arctic Ocean - just a dream or a reality in the near future? (conveners Kevin Hedges, Carolina Behe, Bjarte Bogstad)

2.5 Science Fund

The Science Fund has created an excellent opportunity to put ICES in a position to enable innovative scientific projects that add value to ICES science. The funding is considered as seed money for growth of the ICES portfolio. The Science Fund was welcomed by scientists as a unique and swift yet focused funding opportunity. For ICES

it showed the high potential to engage new disciplines and academia, previously not the case with ICES work. There is good potential that Science Fund receivers will become a part of the ICES constituency by finding ways to create new expert groups. This process is followed by a SCICOM Science Fund Sub Group which also screens the development of the funded projects. During the ASC the Science Fund project leaders gave an interim presentation of their results. SCICOM and Bureau have supported the continuation of the Science Fund as an important part of implementing the ICES Strategy.

2.6 ASC Open Sessions

The launching of ICES strategy and implementation plans has been a focal point during 2014 for showing both ICESe visions and the repositioning of the organiaztion as one of the major players in marine science. A major event for this was the Annual Science Conference and the SCICOM Open Sessions. The Open Sessions represent an opportunity for Strategic Initiatives and Steering Groups, together with ASC participants, to review their activities, strategize their science, develop synergies and address common challenges. These sessions often result in new proposals for working groups, workshops, and Theme Sessions for forthcoming ASCs.

In ASC 2014 the SCICOM Open Plenary session was called *Strategic Scientists – shaping the future of ICES together*. The session was dedicated to launching the new Science Plan and showing the visions of a wide and interesting scientific scope. To implement the new Science Plan new engagement is required. An important message was to show that engaging in ICES creates opportunites for scientists regarding career and personal development. The Open Session was created by the SCICOM and Steering Group chairs, and the plenary was followed by specific sessions representing Steering Groups and Strategic Initiatives a summary of which follows below.

In the open session and ASC overall there was a drive to make SCICOM members and Steering Group chairs more visible as ICES scientific ambassadors. SCICOM, as well as ACOM members were given different colored badges to increase visibility and show their specific role in the community. Further activities during the ASC were directed at early career scientists such as a SCICOM "bus stop" at the welcome reception, where SCICOM members were available to present and discuss ICES science vision and show how to engage. Throughout the ASC week the early career scientists had opportunites to network with established ICES scientists in short mentoring activities such a career chat lunch break event.

These ASC events prompted some quite positive feedback, with participants reflecting on feeling welcomed in an open and creative environment.

3 SCICOM Open Session

Monday, 15 September, A Coruña, Spain

3.1 Joint Open Session: Integrated Assessments and Ecosystem Surveys (SSGIEA/SSGIEOM; Dave Reid/Nils Olav Handegard)

The session was kicked off by a short introduction on recent technological developments in platforms for ocean observing systems, emphasizing the opportunities offered by these new platforms. This was followed up by an introduction of the needs from the new integrated assessment groups, with a particular emphasis on the importance of scale in the observations.

The subsequent discussion focused on the importance for the observation to be closely linked to the decision making processes, by analogy with Harvest Control Rules in fisheries. Advice should be seen as an action leading to a response, and where a measure leads to a predictable result. So we need to know at what spatial and temporal scales we can evaluate and then predict. Surveys are good for telling where you are in relation to reference points. The survey is thus very useful when you are close to, or outside, the reference value. We will also need standards for ecosystem data collection on surveys and quality assurance frameworks, including accuracy and precision.

A common challenge is to establish a common currency to evaluate the trade-offs between different ecosystem objectives, including fisheries and fishery objectives. To initiate this, the initial approach to ecosystem advice should probably be to deliver ecosystem information in combination with fishery advice.

When setting up observation and monitoring, understanding the rates and scales of ecosystem processes is crucial. Some ecosystem processes will be appropriate to sample at the same spatial and temporal scale as fishery surveys, typically annually. But others will need a different sampling approach, e.g. use of satellites for productivity. But fishery surveys can still provide ground truth data in a multi-scale approach.

The conclusion from the session was that there is a need for research to develop the next generation monitoring programme and that this must be carried out in close collaboration with the groups responsible for developing the integrated ecosystem advice. Particularly, the observations should be developed such that there is a close link to those parameters that are used in the advice, and that the spatial and temporal scales of those parameters are appropriate for the advice given.

3.2 Joint Open Session: Steering Group Ecosystem Processes and Dynamics / Strategic Initiative on Biodiversity Advice and Science (SSGEPD/SIBAS; Graham Pierce/Henn Ojaveer)

This Open Session was well attended with 65 registered participants. The programme comprised six short presentations followed by discussion:

- Monitoring the changing status of North Sea fish communities: at what point is Good Environmental Status achieved? (Simon Greenstreet, Chair WGBIODIV)
- MSFD and benthic indicators: from indicator compatibility and complementarity to efficient monitoring programmes (Steven Degraer, Chair BEWG)
- Non-indigenous species in the MSFD: requirements and reality in data availability, indicator development and impact assessment (Henn Ojaveer, Chair SIBAS)

- Questions of scale, challenges raised by regional assessments of GES for biodiversity (Mark Dickey-Collas, ICES)
- Current ICES advice in relation to biodiversity issues (Mark Tasker, Vice Chair ACOM)
- The contribution of molecular taxonomy to biodiversity science (Antonina Dos Santos, representing WGIMT)

Key points to emerge from the talks included:

- The abundance of some fish species in the North Sea (e.g. flatfish) is rising to unprecedented levels, possibly due to climate change, so that the interpretation of such trends as indicating improving environmental status may need to be revised.
- Since Member States are developing indicators independently, a plethora of indicators of differing utilities has been developed; the harmonization of approaches taken and the development of larger scale views of environmental status present significant challenges.
- Invasive alien species are a threat to GES and monitoring priorities include the (post-introduction) natural changes in distribution of such species.
- Fishing at MSY will not necessarily deliver GES; there is a need to manage impacts which occur at a (local) spatial scale smaller than that used for fishery management.
- ICES gives advice on a range of issues related to ecosystem status, e.g. bycatch of PET species (e.g. marine mammals, seabirds), aquaculture escapes, VMEs and survey design; it needs to continue to develop the science to underpin this advice.
- Molecular genetics is delivering tools for monitoring biodiversity including metagenomic analysis and metabarcoding.

Discussion ranged across several topics, including:

- The degree to which the new molecular tools are quantitative.
- The need for indicators of ecosystem function (not only structure) in the face of a lack of knowledge about which functions are important.
- The need to address societal issues in a timely manner and hence to focus on what we do know about ecosystem function rather than what we don't know.
- The need to critically evaluate targets before introducing management measures.
- The mismatch of scales at which fisheries are managed and at which environmental impacts occur.
- How to choose between alternative indicators which provide different kinds of information.
- The need to focus on the characteristics of healthy used (not pristine) ecosystems.
- How to develop integrated assessments of ecosystem status.
- Subsequent to the open session, a linked Theme Session proposal was submitted for the 2015 ASC (TITLE: How to hit an uncertain, moving, target: achieving GES under the MSFD; CONVENORS: Graham Pierce, Antonina dos Santos, Mark Tasker).

3.3 Open Session on Ecosystem Pressures and Impacts (SSGEPI; Daniel Duplisea)

At this year's ASC it was decided that a more conventional style of reporting would be held for groups because of the recent merger of SSGSUE and SSGHIE under the banner of EPI this year and the need for groups to become familiar with other groups in the Steering Group. The online reporting form was used extensively in the lead-up to this meeting and 18 of 22 groups filed reports using this tool. Questions in the online form concerned the welfare of the groups (e.g. do you have sufficient expertise in your group's attendance?) and progress (are you on track to meet you milestones in the multi-annual TOR?). The SSG Chair presented a summary of the reports noting commonalities and differences, which informed discussions amongst participants especially working group chairs. Major points and issues to take forward arising from these discussions were:

- Next year reporting should be more thematic and deal with how each SSGEPI groups sees their potential contribution to integrated ecosystem assessment
- Discussion on reporting and contributions to IEA will be initiated via email and webex
- Diadromous fish groups should move to SSGEPD as they are species-based and are potentially more at home there
- The online reporting form is useful and should be improved upon for next year – chairs do not find it too difficult to fill in.

Wednesday, 17 September, A Coruña, Spain

3.4 SISAM Open Session: Advancement of stock assessment methods to support sustainable fisheries (Steve Cadrin/Ciaran Kelly)

At the SISAM open session three presentations were made on the past achievements of SISAM, current work in progress, and some ideas about the future of SISAM and what could be achieved within the context of a strategic initiative.

There was an open discussion afterwards, with some valuable interactions on the context of the assessment issues which SISAM is trying to address in a strategic way on a global platform. It was discussed that the successes of the past (world congress on stock assessment), and current work such as the development of best practice principles and testing and performance would be important elements of the continued SISAM initiative. It was also considered that the global nature of some of the challenges facing stock assessment would mean that a global stock assessment forum (GAMe) would also be an important development in helping to address these issues. On that basis, SISAM agreed to submit a proposal to the next Bureau meeting in Octoberto seek funding for another three years, a timescale over which the initiative would be concluded.

3.5 BSG Open Session: Finding ways forward for integrated ecosystem understanding and advice (Jörn Schmidt/Carmen Fernandez)

The BSG held an open session on Wednesday afternoon at the ASC. The session was well attended (approximately 100 participants) and considered a success. Three presentations were given with the aim of providing inspiration ,stimulating thought, and discussion on how we can progress on the integration of ecosystem aspects into assessment and advice. In addition to the ensuing discussion at the open session itself, the session served as a catalyst for the BSG action point on integrating the bycatch of sensitive species into fish stock advice.

Presentations

- Integrating Vulnerable Species concerns into the ICES Advice Framework (Simon Northridge, University of St Andrews)
- Use of complex models for integrated advice: methodological approaches and examples (Sigrid Lehuta, Ifremer)
- Indicators for Integrated Ecosystem Assessments (Phillip Levin, NOAA)

3.6 Facing the Data Armada: An Open Session on big data, operational products, and publishing (Jörn Schmidt)

The session had three interesting presentations and was attended by 45 people. The first was an introduction by Jens Rasmussen who provided an overview of Big Data and some information about the ICES Data Centre. A second talk was provided by Dr. Lasse Riemann (CAU, Kiel, Germany) on algorithm challenges for big data problems in theory and applications. This (technical) talk examined state-of-the-art methods used to analyse Big Data, streaming graph and streaming data analysis A third talk was provided by Rosa Barciela (Met Office, UK) on operational oceanographic products, showcasing the data we are collecting both now and that we will collect in the future.

It was not only about the vast increase of data, but also on a higher degree of distributed data. Although the latter topic was only briefly discussed. During the final part of the Open Session, people were asked why they attended the session. A variety of particpants included i) user, ii) single end user, and iii) people working in the Data Centre programmers, amongst others. A number of people expected to learn more about the ICES Data Centre and how to access its data.

It was evident from the attendees' feedback that Big Data approaches are not yet strongly presented in the ICES community (at least based on the attendees). Instead, attendees were looking to ICES for advice and potential guidance on how to best utilize new techniques. This was particularly evident from a discussion on the utilization of the current ICES web services to retrieve data. Some were not aware that the services existed, while others had tried them but lacked information on how to convert outputs to usable formats. DIG has an ongoing action to examine potentially relevant topics for a proposed workshop on how to make the most of ICES data, and the inputs and perspectives from this session is highly relevant for this work as well as for a wider and longer term discussion on how/if ICES approach Big Data.

3.7 SICCME Open Session: Key findings of the 5th Report of the IPCC; SICCME plans for 2015–2016 (Brian MacKenzie)

Lead authors present key findings on climate change at the ASC

The ICES/PICES Strategic Initiative on Climate Change (SICCME) organized an open session to present the latest findings from the 5th Report of the Intergovernmental Panel on Climate Change (IPCC) to the ICES community. Four lead authors of the IPCC 5th Assessment Report presented key panel findings with respect to past and future climate change, changes in the oceans, impacts on marine ecosystems, and consequences for fisheries and ecosystem management.

Matt Collins from the University of Exeter, UK, delivered the panel's long-term projections of climate change, pointing out that while theory, models, and observations need to be developed further, there are some robust features in climate models that can be used to make assessments of very large-scale climate change.

Svein Sundby from the Institute of Marine Research, Norway, gave a summary of the report's ocean chapters. The impacts of global climate change on ocean physics and chemistry are threefold: oceans are getting warmer, losing oxygen, and becoming acidified. The overall consequences of climate change for marine ecosystems include alterations in productivity, displacement of species, and changes in species diversity as well as in the structure and functioning of ecosystems.

Anne Hollowed from the Alaska Fisheries Science Center, USA, gave a presentation on the projected impacts of climate change on Arctic marine ecosystems. With climate change having a stronger effect in cold areas, Arctic marine ecosystems are particularly vulnerable to changes, ranging from increased ocean temperature to reduced sea ice cover in the summer and changes in the size, distribution, and abundance of plankton.

Jake Rice from the Department of Fisheries and Oceans, Canada, concluded events by summarizing the mitigation report by Working Group 3. He pointed out that climate change mitigation is a global commons problem that requires international cooperation across scales. Technology and human behaviour (and the changing of it) are key to solving the problem.

The presentations summarized the latest knowledge on climate change impacts, adaptation and mitigation in relation to marine ecosystems. This knowledge will be useful for the ICES community when planning new activities in relation to climate change research and how it might fit into the ICES Strategic Plan.

The session was well attended with 50–100 participants.

4 Reports of Science Steering Groups

4.1 SCICOM Steering Group on Ecosystem Processes and Dynamics (SSGEPD, Graham Pierce, UK)

4.1.1 Status of SG Terms of Reference

In terms of the generic ToRs, SSGEPD is functioning reasonably well, at least in terms of providing assistance to EGs when needed and facilitating communication. However some of this work is basically "firefighting" -dealing with issues that arise when EG chairs are unfamiliar with ICES procedures or when ICES imposes new ToRs (see below). Incoming EG chairs do receive instructions about how ICES functions but possibly these instructions need to be revised. SSGEPD met jointly with SIBAS at the ASC (Monday Open Session) but did not specifically contribute to the Wednesday afternoon open sessions. The intent is to hold regular WebEx meetings for SSGEPD and this will hopefully come to fruition before Christmas.

There are two more specific ToRs. In relation to the first, a core group has been established, comprising Steven Degraer (BEWG, until end of 2014), Ann Bucklin (WGIMT), Marina Santurtun (WGCEPH), and Piotr Margoński i (WGZE). During the last quarter of 2104, the intent is for the core group to work on the second specific ToR, namely "Generate a position paper on the contribution of EPD to ICES Science (including identifying gaps in coverage of Science Plan)". This is intended to incorporate work to fulfil some of the generic review and synthesis ToRs, as follows:

- Evaluate coverage provided by EGs; identify gaps which could be filled by new EGs. *[identify complementarity / overlap with EGs linked to other SGs + ACOM]*
- Review scientific products/deliverables of the EGs
- Maintain a "living document" record of SSGEPD work, including a synthesis of the work and achievements of the EGs, including highlights

4.1.2 EG Performance and ToRs Progress

In general the EGs have been able to deliver on their ToRs, although there have been issues with the punctuality of report delivery, reflecting difficulties in attracting sufficient participants to complete work on the ToRs. This is apparent from some of the responses to the questionnaire survey. Several issues were raised by WGBIODIV and WGCEPH:

WGBIODIV had a low turnout and the chair said: "Firstly we need more people to share the workload; secondly we need more seabird and marine mammal experts in particular. But a greater width of expertise across each marine ecosystem component would be beneficial". He further comments: "How do we maintain group membership, if there is a perceived need for the group (I believe that the need for this group is VERY strong given the breadth of issues with implementing the MSFD) in respect of Descriptor 1 Biodiversity is maintained?"

WGCEPH had a good turnout but the co-chairs noted the "lack of researchers on assessment and management of cephalopods, modellers, and fisheries science people". They further commented: "Maybe ICES does not have the capacity to provide the people, but countries interested in cephalopods. Maybe ICES could help to give added value to these species groups as part of its broader current mission on ecosystem knowledge and management."

At this time, new ToRs are being received in relation to OSPAR requests (e.g. BEWG) and Ecosystem Overviews. While EGs are usually eager to help, adding new ToRs while not modifying existing ToRs is putting extra strain on already limited human resources.

4.1.3 EG Participation

SSGEPD EGs were asked to respond to a questionnaire providing an overview of how well things are goingSix EGs responded (BEWG, WGBIODIV, WGCEPH, WGHABD, WGIMT, and WGZE). The more responsive groups are also reflected in the identity of the core group, provision of highlights material,l and participation in the SI-BAS/SSGEPD Open Session at the ASC.

Nine EGs did not respond to the questionnaire (not counting the three workshops). Of these, WGRMES held its inaugural meeting during the ASC and the chair has been in regular contact since then. Brief e-mail communications took place with the WGCRAB and WGSPEC chairs. However, in relation to the other EGs, there has essentially been no communication (or responses to communications during 2014), notwithstanding the continued delivery of reports as expected.

4.1.4 Structural Diagrams of the Member EGs

SSGEPD does not have a structural diagram as such although it could be divided into taxon-and habitat-based (BEWG, WGCEPH, WGCRAB, WGCRAN, WGHABD, WGSPEC, WGZE, WKLS, and WKPGMEQ), process-based (WGBIODIV, WGEVO, WGOH, WGRFE, and WGRMES) and tool-based (WGOOFE, WGIMT, and WKGIC) groups. The current illustration of the membership below is based on the format of the ICES webpage search output.

SSGEPD membership has changed over the year; most recently, several EGs working on anadromous fish joined or re-joined SSGEPD (namely WGDAM, WGRECORDS, and WKBECEEL).

Expert groups in SSGEPD.

	Expert Group topic	Acronym	Chairs
1	Working Group on Integrated Morphological and Molecular Taxonomy	WGIMT	Ann Bucklin
2	Benthos Ecology Working Group	BEWG	Steven Degraer
3	Working Group on Cephalopod Biology and Life History	WGCEPH	Jean-Paul Robin, Marina Santurtun
4	Working Group on Biodiversity Science	WGBIODIV	Simon Greenstreet
5	Working Group on Small Pelagic Fishes, their Ecosystems and Climate Impact	WGSPEC	Jürgen Alheit, Priscilla Licandro
6	Working Group on Phytoplankton and Microbial Ecology	WGPME	Xose Anxelu G. Moran, Alexandra Kraberg
7	Working Group on Crangon fisheries and life history	WGCRAN	Marc Hufnagl
8	Working Group on Zooplankton Ecology	WGZE	Piotr Margonski
9	Effectiveness of Recovery Actions for Atlantic Salmon	WGERAAS	Dennis Ensing

10	Science Requirements to Support Conserv., Restor. and Mgmt of Diadromous Species	WGRECORDS	Niall Ó Maoiléidigh, Atso Romakkaniemi
11	Working Group on Oceanic Hydrography	WGOH	Stephen Dye, Kjell Arne Mork
12	Working Group on the Biology and Life History of Crabs	WGCRAB	Ann Dorte Burmeister
13	Working Group on Resilience and Marine Ecosystem Services	WGRMES	Sebastian Villasante
14	ICES IOC Working Group on Harmful Algal Bloom Dynamics	WGHABD	Bengt Karlson
15	Working Group on Recuitment Forecasting in a Variable Environment	WGRFE	Samuel Subbey, Liz Brooks
16	Working Group on Fisheries-Induced Evolution	WGEVO	Mikko Heino, Ulf Dieckmann, Bruno Ernande
17	Working Group on Operational Oceanographic Products for Fisheries and the Environment	WGOOFE	Rosa M. Barciela Fernandez, Barbara Berx
18	Workshop on Lampreys and Shads	WKLS	Pedro Raposo de Almeida, Eric Rochard
19	Workshop of a Planning Group on the Monitoring of Eel Quality under the subject "Development of standardized and harmonized protocols for the estimation of eel quality"	WKPGMEQ	Claude Belpaire, Olga L.M. Haenen
20	Workshop on Growth-increment Chronologies in Marine Fish: climate-ecosystem interactions in the North Atlantic	WKGIC	Bryan Black, Christoph Stransky

4.1.5 Science Highlights

WGZE highlights the production of "a new, useful tool for presenting integrated analyses and assessment of temporal and spatial dynamics in plankton, hydrography, and climate to create a comprehensive examination of changes in long-term plankton community and more precise model parameterization" in addition to CRR 318, the latest Zooplankton Status Report

WGCEPH had a strong focus on the MSFD in 2014 and has also announced the forthcoming publication of two CRRs linked to its work. Highlights slides were also received from WGHABD and WGIMT.

4.1.6 ACOM and SCICOM Interaction

Several of the SSGEPD EGs are undertaking work with some links to advice, even if usually not responding to specific client requests. Notably WGCRAN and WGCEPH held a joint workshop at the end of 2013 on needs for assessment and management (WKCCM).

4.1.7 Perceived Needs and Gaps

Comparing the portfolio of SSGEPD EGs and their ToRs with the "Ecosystem Processes and Dynamics (EPD)" section of the Science Plan shows evident gaps (e.g. no coverage of seabirds or marine mammals and no dedicated fish ecology group). In reality, however, groups addressing these taxa exist, working under the auspices of ACOM. As has been expressed before, much work relevant to the EPD aspects of the Science Plan is

undertaken outside the portfolio of SSGEPD, and indeed SSGEPD EGs contribute to a range of science and advisory objectives within ICES. Secondly, and equally obviously, ICES relies on the input of scientists from its Member Countries, and a top-down imposition of new EGs would be unlikely to succeed. Without necessarily wishing to return to a detailed formal coding of Science Plan objectives (and extend the coding to advisory objectives), it would be useful if EG ToRs could be more explicitly linked to the relevant ICES science and advisory objectives.

It is apparent that the new three-year ToRs for SCICOM EGs have several advantages but also present some difficulties. Firstly, they limit flexibility and make it more difficult for EGs to respond to additional ToRs imposed by ICES. This would be less of a problem if EGs were always able to attract sufficient members to attend meetings and address specific ToRs, which seems to be an increasing problem. Secondly, some three-year ToRs make monitoring of outputs more difficult since many deliverables are not expected until the second or third year of the cycle .

Given that many EGs in practice have both science and advisory roles, even if one is often clearly dominant, it would be useful to find ways of enhancing science-advice links, possibly with more groups having dual parentage and or co-chairs from science and advice sides. This might also require some revision of the rules under which science and advice groups operate in order to make them more similar.

4.2 SCICOM Steering Group on Ecosystem Pressures and Impacts (SSGEPI, Daniel Duplisea, Canada)

4.2.1 Progress in Relation to SSG TOR

- Estimating long-term trends of human impacts on marine ecosystems by developing historical baselines of population and community structure and production to be used as reference points;
- Understanding, quantifying, and mitigating multiple impacts of human activity on populations and ecosystems;
- Developing methods to quantify multiple direct and indirect impacts from various human activities;
- Estimating the vulnerability of marine ecosystems to these impacts;
- Developing approaches to mitigate these impacts;
- Developing indicators of human activities pressure;
- Providing evidence in support of the sustainable provision of ecosystem goods and services.

4.2.2 EG Performance and Participation

- All expert groups but one (MCWG) have switched to a three-year y ToR. One group (WGHIST) will complete its three- year ToR in 2014.
- Expert groups on the whole report being able to meet their milestones and final ToRs.
- Groups are producing or have clear plans to produce products such as primary publications, CRRs, and advice.
- For the most part, the majority ofexpert groups have both sufficient numbers of experts and the proper kinds of expertise to fulfill their terms of reference. There are some exceptions for example in the realm of aquaculture

where algae aquaculture experts are not present. Other groups have requested guidance and closer links to the ICES Data Centre. Discussions with the Head of the Data Centre have been initiated and it is anticipated that things will advance smoothly in this area.

4.2.3 Expert Groups in SSGEPI

Expert groups in SSGEPI. **=groups which have just joined from ACOM.

	Expert Group topic	Acronym	Chairs
1	Joint CIESM/ICES Workshop on Mnemiopsis Science	JWMS	Sophie Pitois, Tamara Shiganova
2	Marine Chemistry	MCWG	Katrin Vorkamp
3	Socio-Economic Dimensions of Aquaculture	SGSA	Gesche Krause
4	Stock Identification Methods	SIMWG	Lisa Kerr, Stefano Mariani
5	Application of Genetics in Fisheries and Mariculture	WGAGFM	Dorte Bekkevold
6	Aquaculture	WGAQUA	Pauline Kamermans, Peter Cranford, Karin Boxaspen
7	Biological Effect of Contaminants	WGBEC	Bjørn Einar Grøsvik, Ketil Hylland
8	Ballast and Other Ship Vectors	WGBOSV**	Sarah Bailey
9	Effects of Extraction of Marine Sediments on the Marine Ecosystem	WGEXT	Ad Stolk
10	History of Fish and Fisheries	WGHIST	Georg Engelhard, Ann-Katrien Lescrauwaet
11	Introduction and Transfers of Marine Organisms	WGITMO**	Henn Ojaveer
12	Marine Benthal and Renewable Energy Developments	WGMBRED	Jennifer Dannheim, Andrew Gill
13	Methods of Fish Stock Assessments	WGMG	David Miller
14	Marine Habitat Mapping	WGMHM	Pål Buhl Mortensen
15	Marine Planning and Coastal Zone Management	WGMPCZM	Andreas Kannen
16	Marine Renewable Energy	WGMRE	Finlay Bennet
17	Marine Sediments in Relation to Pollution	WGMS	Craig Robinson, Lucia Viñas
18	Pathology and Diseases of Marine Organisms	WGPDMO	Neil Ruane
19	Multispecies Assessment Methods	WGSAM	Daniel Howell, Steve Mackinson
20	Spatial Fisheries Data	WGSFD	Josefine Egekvist, Heino Fock
21	The value of Coastal Habitats for Exploited Species	WGVHES	Rom Lipcius, Ingrid Tulp, Håkan Wennhage
22	Joint Rijkswaterstaat/DFO/ICES Workshop: Risk Assessment for Spatial Management	WKRASM	Rob Gerits, Roland Cormier

4.2.4 Science Highlights

All groups have scientific outputs worthy of mention. Some of these are just the beginnings of a work plan while others are partial developments towards a three-year ToRand others are more complete products. A few highlights of some groups are presented here. This gives an idea of some of the useful, more tangible, and nearer to completion pieces of work that groups are doing as well as an overview of the kind of work conducted under the umbrella of Ecosystem Pressures and Impacts.

- MSWG has undertaken a huge variety of tasks in areas such as contaminants, ocean acidification, marine litter, and fulfilling OSPAR requests. The group is addressing many areas of the Science Plan that only somewhat covered or not covered at all in other ICES fora.
- SIMWG has worked efficiently by correspondence this year and hascontributed significantly to its ToRs. Based on a specific request from WGWIDE, SIMWG recommends that blue whiting be consider as two units with the stock boundary defined at either the northern edge of ICES areas VIIk and VIIj or the northern edge of the ICES boundaries VIIc and VIIb.
- WGAGFM noted that introgression between wild and introduced fish varies considerably by species, place, and time and is therefore a case by case approach.
- WGAQUA took on a coordinating role in ISO aquaculture standards development in ICES.
- WGEXT developed a questionnaire to help standardize definitions of dredging intensity across ICES Member Countries. This is necessary as part of the MSFD Descriptor 6 requirements.
- WGMRE has been strongly involved in the OSPAR commissioned project review on impacts of wave and tidal energy.
- WGDPMO has released two new Disease Leaflets (# 59 & 60).
- WGSAM has submitted a proposal to the Benchmark Steering Group and ACOM to review multispecies models for standardized output and quality control in the benchmarking process.
- WGVHES has produced two papers submitted to the primary literature on the value of coastal habitat for exploited species

4.2.5 SCICOM–ACOM Interaction

- SSGEPI has a fairly strong linkage to both committees. For example, several advisory requests are handled by EPI groups such WGBOSV and WGITMO.
- WGSAM produce the MSVPA key runs which produces mortality estimates for the North Sea cod assessment.
- SIMWG has been strongly involved in issues related to Irminger Sea redfish stock structure.
- WGMG has worked closely with SISAM in unfolding its programme which has direct relevance for all ACOM assessment working groups.
- It is anticipated the SSGEPI groups will continue to work closely with ACOM and ICES advice.

4.2.6 Needs Gaps

Certain expert groups have some particular needs:

- WGHIST will be finishing its three-year ToR in 2014 and as such will be the first group to do so and to self-evaluate. This group is seen as having an important function especially in relation to MSFD historical baseline development for certain kinds of ecosystem indicators. Unfortunately, this group has had trouble attracting appropriate experts to perform some of these quantitative developments. We suggest that a group potentially arising from WGHIST would be more focused on this particular area and that a researcher with expertise in the area be one of the co-chairs.
- Algae experts for WGAQUA are required
- It was noted that in some groups there is a desire to have good knowledge transfer between mature and new scientists. There does seem to be a gap in this area in some ICES working groups where the senior scientists no longer see a place for themselves in such tightly-defined, product-oriented working groups.

4.2.7 Other Points

- Daniel Duplisea (Canada) will be stepping downas Chair after four years at the end of 2014.
- Henn Ojaveer (Estonia) will be taking over as EPI chair in January 2015.
- Diadromous fish groups (WGRECORDS WGERAAS) will be moving to SSGEPD from EPI immediately, as these species-specific groups would seem to be better placed in EPD. In addition the two new diadromous groups (WGDAM , WKBECEEL) will also move to SSGEPD. This arrangement also leads to a more equitable distribution of expert groups between steering groups.
- The ACOM groups (WGITMO, WGBOSV) will be moving SSGEPI immediately. These groups have OSPAR advice requests but the transition has been cleanly handled by the Secretariat and various chairs such that there has been a smooth transition.
- It is suggested that for the 2015 ASC, SSGEPI groups work towards an idea such as "how can your group contribute to Integrated Ecosystem Assessment". This is to complement the top-down approach imposed by the science with a bottom-up approach coming from the working groups themselves.

4.3 SCICOM/ACOM Steering group on Integrated Ecosystem Assessments (SSGIEA, Dave Reid, Ireland)

4.3.1 Status on SG Terms of Reference

General ToRs (for all SSGs)

a) Provide guidance to constituent EGs on ToRs and outputs to ensure relevance to the Science Plan;

- IEA Science Plan component and EG ToRs fully aligned

b) Identify gaps and overlaps in the EG base, and consolidate and form new EGs as appropriate;

- Geographical coverage of IEA groups covering all European waters from the Barents Sea to the West Mediterranean, plus NW Atlantic

c) Review the scientific products delivered by EGs to ensure the maintenance of appropriate quality standards;

- No new products to date

d) Advise SCICOM on the form and substance of the ASC, symposia, and workshops;

- Done

e) Ensure communication among Steering Groups and their constituent EGs;

- Strong collaboration with SSGIEOM and joint session at ASC

f) Establish and nurture collaborations within and outside the ICES community;

- Ongoing

Overarching ToRs for SSGIEA

g) Map the EGs and their ToRs against the information and data that ICES needs to deliver the Science Plan and its advisory work, suitably prioritized.

- IEAs, EGs, and ToRs are strongly linked to the Science Plan. Priorities for Assessments, Ecosystem Descriptions, and delivery of trend information to advice have been established

h) Promote the development of the Regional Ecosystem Descriptions in standardized formats along the lines proposed by WKECOVER and WKDECOVER. Propose additions and improvements to those guidelines in collaboration with constituent EG.

- Regional Ecosystem Descriptions have been prepared in all areas and are being update as appropriate. Standardized formats following WKECOVER and WKDECOVER are being incorporated.

i) Work with ACOM/SCICOM Benchmark Steering Group (BSG), and chairs of WKBEMIA 2013 to develop benchmark guidance for developing IEA in the constituent IEA EG.

- The IEA work is not yet ready for full benchmarking but the SSG and RG chairs are working with BSG on developing approaches

j) Promote the development of outlined Integrated Ecosystem Assessments with the IEA EG. It is recognized that a variety of approaches to IEA exist, and different approaches will be appropriate to the different IEA EG based on skill sets and local conditions. SSGIEA will promote innovative approaches including using partial component based analyses, and use of combination quantitative and expert judgement approaches.

- Formal IEA, following arrange of approaches are under construction in all IEA EG. The basic approach is for full IEAs but with focus on particular key linkages

k) Maintain a watching brief over initiatives in IEAs in the wider community beyond ICES. This should include new approaches or methods for IEAs, and broadening of the IEA concept to potentially include economic and social drivers and impacts.

- Ongoing

l) Promote the development within EGs of standards and guidelines for good practice and quality assurance in the collation and use of data. This should extend to the maintenance of archived data used in the IEAs, and documentation of all the steps taken to arrive at a conclusion for a given IEA, and the possible involvement of the ICES Data Centre.

- Ongoing

4.3.2 Specific ToRs for 2014:

l) Organize SSG meetings which will take place during the ASC and webexes, as appropriate, to discuss EG accomplishments and plans for 2015, with a focus on the overarching ToRs specified above;

- SSGIEA meeting with SSGIEOM at the ASC was well attended and productive, with focus on links between the two SSG and the links between data collection and its use in the IEA work.

4.3.3 EG Performance/MA ToR Progress

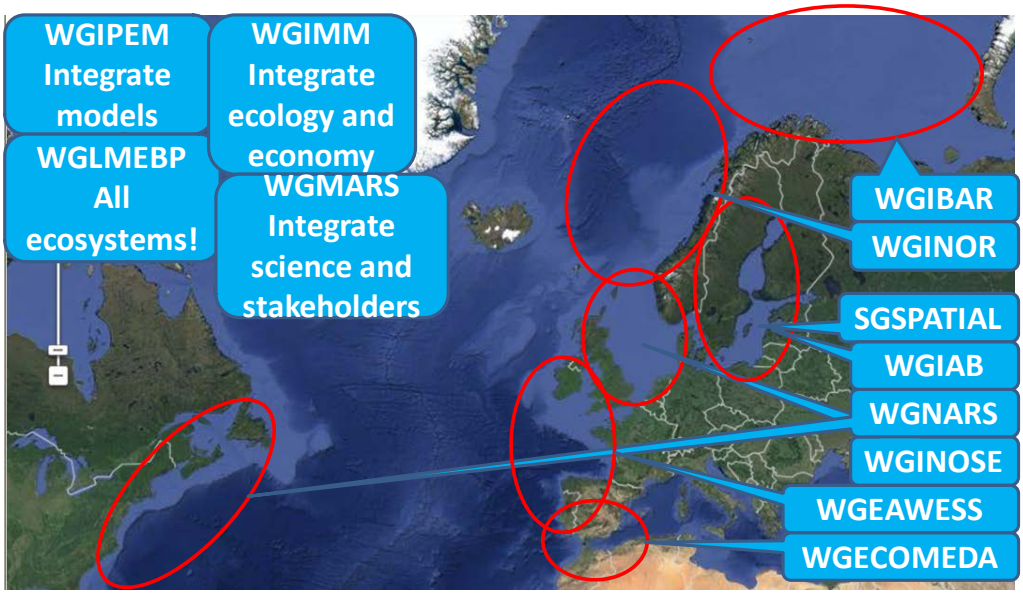
All the EGs are performing well, albeit sometimes with limited participation. With the exception of WGIPEM, WGIMM, and SGSPATIAL, the EG have all developed multi-annual ToRs. Several of the EG are also new and had their first meetings in the last year; WGIMM (promoted from an SG), WGIBAR, andWGECOMEDA.

4.3.4 EG Participation

Attendance at all group meetings held since the last report has been good – with the exception of WGINOSE, where only eight people attended directly and WGEAWESS with a similar number of active participants and which could not find suitable meeting dates in 2014.

Structural Diagrams of the Consistent EGs

The figure below shows the geographical coverage of the component groups of SSGIEA. The groups identified in the right-hand panels are the geographically specific Integrated Ecosystem Assessment groups. All aim to develop appropriate IEA methodologies, Regional Ecosystem Descriptions and start to identify operational ecosystem advice to managers. The four groups in the left panels havce a more general remit and also support the work of the geographically focused groups. WGIPEM is targeted on developing the ecosystem models needed for IEA. WGMARS aims to support the integration of the wider community of stakeholders and WGIMM to link up with economists and social scientists. Finally WGLMEBP sets the ICES IEA work in the global context of the LME programme.



Expert groups in SSGIEA. *=groups which are being moved to SSGIEA.

	Expert Group topic	Acronym	Chairs
1.	Working Group on Integrative, Physical-biological, and ecosystem modelling	WGIPEM*	Myron Peck and Rubao Ji
2	Study Group on Spatial Analysis for the Baltic Sea	SGSPATIAL	Michele Casini and Stefan Neuenfeldt
3	Working Group on Ecosystem Assessment of Western European Shelf Seas	WGEAWESS	Enrique Nogueira, Dave Reid, Pascal Laffargue, Maria de Fatima Borges,
4	Working Group on the Northwest Atlantic Regional Sea	WGNARS	Sarah Gaichas and Robin Anderson
5	Working Group on the Integrated Assessments of the Barents Sea	WGIBAR	Edda Johannesen and Yury Kovalev
6	Working Group on Integrating Ecological and Economic Models	WGIMM	Jörn Schmidt, Rasmus Nielsen and Eric Thunberg
7	Working Group on Integrated Assessments of the North Sea	WGINOSE	Andy Kenny and Christian Möllmann
8	Working Group on Large Marine Ecosystem Programme Best Practices	WGLMEBP	Hein Rune Skjoldal and Rudolf Hermes
9	ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea	WGIAB	Lena Bergström Maciej Tomczak and Martin Lindegren
10	Working Group on Comparative Analyses between European Atlantic and Mediterranean marine ecosystems to move towards an ecosystem-based approach to fisheries	WGCOMEDA	Marta Coll, Manuel Hidalgo and Hilmar Hinz
12	Working Group on the Integrated Assessments of the Norwegian Sea	WGINOR	Geir Huse and Gudmundur J. Óskarsson
13	Working Group on Maritime Systems	WGMARS*	Dorothy Dankel

4.3.5 Science Highlights

These highlights are the personal selections of the SSG chair and in no way reflect the importance and value of any work not mentioned here. Some groups are not highlighted here, as their highlight was in starting up and building the complete geographical coverage in most European waters e.g. WGIBAR, WGINOR, and WGECOMEDA. Other groups did not meet in the last year e.g. WGEAWESS and WGIMM.

WGIAB carried out novel Integrated Trend Assessments (ITAs) for several Baltic Sea subsystems and aim to publish these shortly. They have also started work on a demonstration of IEAs for Baltic fish stocks, and are starting to develop Bayesian Belief Networks (BBN) for analyses of the Baltic Sea ecosystem functioning.

WGINOSE also continued development of a BBN model to explore the relationships between ecosystem components in the North Sea and to make predictions of state changes in response to different management scenarios.

WGLMEBP helped establish a new and more comprehensive description of 18 Arctic LMEs. It is suggested that the development of IEA approaches for the LME be carried out in collaboration with ICES and the SSGIEA.

WGMARS passed a landmark for ICES with the first forum within the ICES WG structure to facilitate stronger working relations between scientists and stakeholders. This evolved from informal discussions amongst and between scientists and stakeholders. The work promoted a shared understanding of science challenges, how these are framed in ICES strategy and by stakeholders' perspectives on their research needs, and how this relates to collaboration between scientists and stakeholders.

WGNARS aimed to produce a "worked example" IEA analysis and made significant progress on identifying and operationalizing management objectives for this in the Northwest Atlantic Regional Sea. Many objectives have been identified by various entities, but nearly all are high level aspirational objectives rather than operational objectives which can be directly incorporated within an IEA. The group began a process of translating example objectives into specific, measurable, achievable, relevant, and time-bound (SMART) operational objectives.

WGIPEM worked on the development and use of model systems, a critical part of the IEA process. In particular they focused on: model horizons (from trait-based to adaptation in models), end-to-end ecosystem modelling (examples and submodel parameterization), novel measurement techniques (linking data to models), management advice (the role of models outputs), and physiological-based models (bioenergetics – dynamic energy budget applications).

4.3.6 ACOM and SCICOM Interaction

To date no co-chair for SSGIEA from ACOM has been proposed. Instead, the new chair of ACOM has suggested that the SSG chair should be an ex-officio member of ACOM. This was discussed and agreed by SCICOM at the ASC.

4.3.7 Perceived Needs and Gaps

One important future need for SSGIEA is to look to holding a joint meeting of the EG groups and especially the IEA groups. It has been recognized that at this developmental stage, the different EGs will develop based on local conditions and on skills available. However, in the future, we will need to start a process of harmonizing the approaches between groups. To this end we are exploring the possibility of holding a joint workshop session possibly under the auspices of a new EU project H2020-BG-2014-1, where the Ecosystem Approach component will be led by ICES, should the proposal be accepted. The SSG chair will follow this up.

4.4 SCICOM/ACOM Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM; Nils Olave Handegard, Norway)

4.4.1 Status on SG Terms of Reference

This is a short summary of the specific Terms of Reference (ToRs) of the SG.

A-F are common Terms of Reference and specify how to consolidate EG base, form new EGs, ensure the coupling to the Strategic Plan, and communication in general be-

tween the EG on matters that are common. The SG is divided into several main categories such astrawl survey, acoustics survey, icthyoplankton surveys, fishery sampling, and also area. This subdivision is used in the communication to ensure that the EGs are not flooded with irrelevant information.

ToR g) Identify shortfalls in skills and knowledge needed to achieve the SG objectives, and where capacity building is needed in particular areas, so that ICES can develop training or other solutions. The SG has sent a skills questionnaire to the EGs, and common gaps were hydrographic skills (WGIPS), socio-economics (WGRFS) and analytical skills including survey design and statistics (IBTSWG, WGIPS, WGBIFS). WGALES, WGACEGG and WGNEPS reported that they had a sufficient skills base. The impacts of the gaps are difficulty in optimizing over complex survey objectives, the use of recreational fisheries data (socio-economics) and analyses of hydrographical data. General work load and budget issues were cited as the most common reasons for the shortage.

ToR h) Map the EGs and their ToRs against the information and data that ICES needs to deliver the Science Plan and its advisory work, suitably prioritized (SP1.1). There is initiated a task to map the SSGIEOM EGs to the information and data they are delivering, and compare this list to that of the secretariat. To facilitate this we will i) work with the secretariat to map the SSGIEOM EGs to the information and data they are delivering. Seven out of 11 survey groups have responded on this. By the end of 2014 we will ask the EGs to quality assure this list and add their products to their ToR to explicitly show what they deliver. The document will be reviewed by WGISUR and provide a good overview of the different surveys and associated data products.

ToR i-j) The development of methodology and adding value to surveys are mainly carried out within the technology groups (e.g. WGFAST, WGFTFB) and WGISUR+WGISDAA, respectively. Developments for fishery data collection schemes are considered by PGCCDBS (proposed to be replaced by PGDATA) and associated EGs (WGCATCH, WGBIOP, WGRFS). A discussion on how to implement new technology/methods/data collection needs to be initiated within the SG. This will be a topic for the SG meeting at the ASC 2014. A discussion on how to implement new technology/methods/data collection was held at the 2014 ASC joint session, see report from the SCICOM open session earlier in this document. There is also a Theme Session proposal for 2015 that addresses these issues.

ToR m) Promote the development within EGs of standards and guidelines for good practice in data collection.

The ICES series of survey protocols (SISP) are being developed across the survey EGs, and a discussion on how to document time series changes have been initiated. This needs to be aligned with the data quality framework initiated by the ACOM EG's, and this will be an important task for the SG in the coming years.

4.4.2 EG Performance/MA ToR Progress

Most EGs are now under the multiannual Terms of Reference (ToRs), and this helps to focus attention on the EGs that are up for evaluation or are establishing its new mutliannual ToRs. We believe that this works well. No groups have finalized the three-year cycle yet, and no experience has been obtained on the evaluation process after the three years. Annual updates are working fine, and some EGs have problems with delivering reports and setting up meetings. However, as a whole the EGs are performing well.

4.4.3 EG Participation

As part of ToR G , we sent out the skills questionnaire that also included EG participation, see above.

4.4.4 Expert Groups in IEOM

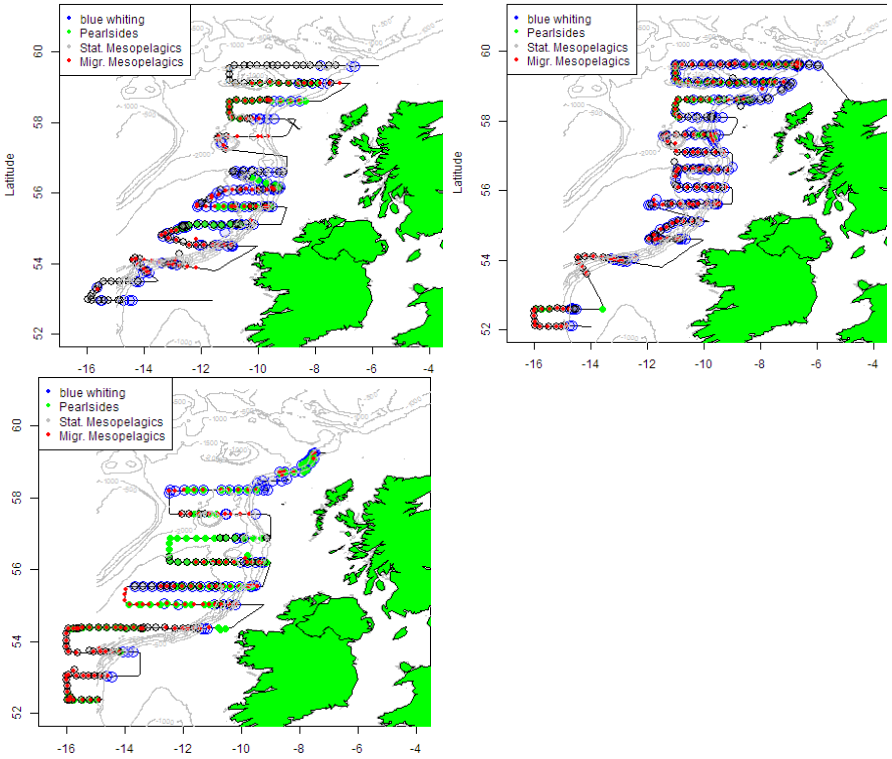
The table below show the structural diagram of the EGs within the SSG, including the new ACOM groups.

Expert groups in SSGIEOM. **=groups which have just joined from ACOM.

	Expert Group name	Acronym	Chairs
1.	Planning Group on Data Needs for Assessments and Advice	PGDATA**	Mike Armstrong and Marie Storr-Paulsen
2	Baltic International Fish Survey Working Group	WGBIFS	Wlodzimierz Grygiel
3	Working Group on Biological Parameters	WGBIOP**	Francesca Vitale and Lotte Worsøe Clausen
4	Working Group on Commercial Caztches	WGCATCH**	Details to be provided
5	Working Group on Improving use of Survey Data for Assessment and Advice	WGISDAA	Sven Kupschus
6	Working Group on Mackerel and Horse Mackerel Egg Surveys	WGMEGS	Cindy van Damme and Finlay Burns
7	Working Group of International Pelagic Surveys	WGIPS	Karl-Johan Stæhr and Ciaran O'Donnell
8	Working Group on Recreational Fisheries Surveys	WGRFS**	Harry V. Strehlow and Kieran Hyder
9	Workshop on Age Reading of Chub mackerel (*Scomber Colias*)	WKARCM**	Andreia Silva and Maria Rosario Navarro
10	Workshop on Age reading of Dab (*Limanda limanda*)	WKARDAB2**	Holger Haslob and Loes Bolle
11	Workshop on Age Reading of Seabass (*Dicentrarchus labrax*)	WKARDL**	Kélig Mahé and Mark Etherton
12	Workshop on Age Reading of Horse Mackerel, Mediterranean Horse Mackerel and Blue Jack Mackerel (*Trachurus trachurus, T. mediterreaneus* and *T. pictatus)*	WKARHOM2**	Pierluigi Carbonara and Kélig Mahé
13	Workshop on Age Reading of Saithe (*Pollachius virens*)	WKARPV	Kélig Mahé and Jane Godiksen
14	Workshop on evaluating current national acoustic abundance estimation methods for HERAS surveys	WKEVAL	Ciaran O'Donnell

	Expert Group name	Acronym	Chairs
15	Workshop on the maturity staging of mackerel and horse mackerel (*Scomber scomber* and *Trachurus trachurus*)	WKMSMAC2**	Cindy van Damme and Pierluigi Carbonara
16	Workshop on scrutinisation procedures for pelagic ecosystem surveys	WKSCRUT	Matthias Schaber
17	Workshop on review of the ecosystem survey requirements	WKSUREQ	David Reid and Nils-Olav Handegard
18	Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VII, VIII and IX	WGACEGG	Maria Manuel Angélico and Pablo Carrera
19	Working Group on Beam Trawl Surveys	WGBEAM	Kelle Moreau
20	Working Group on Electrical Trawling	WGELECTRA	Bob van Marlen and Bart Verschueren
21	Working Group on Fisheries Acoustics, Science and Technology	WGFAST	Verena Trenkel
22	ICES-FAO Working Group on Fishing Technology and Fish Behaviour	WGFTFB	Pingguo He and Petri Suuronen
23	Working Group on International Deep Pelagic Ecosystem Surveys	WGIDEEPS	Kristjan Kristinsson and Chair to be decided
24	Working Group on North-east Atlantic continental slope surveys	WGNEACS	Rasmus Hedeholm
25	Working Group on target classification	WGTC	Rolf Korneliussen
26	International Bottom Trawl Survey Working Group	IBTSWG	Anne Sell
27	Working Group on Atlantic Fish Larvae and Eggs Surveys	WGALES	Cindy van Damme and Maria Manuel Angélico
28	Working Group 2 on North Sea Cod and Plaice Egg Surveys in the North Sea	WGEGGS2	Christophe Loots
29	Working Group on Integrating Surveys for the Ecosystem Approach	WGISUR	Ingeborg de Boois
30	Working Group on *Nephrops* Surveys	WGNEPS	Colm Lordan and Ana Leocadio
31	Workshop on Egg staging, Fecundity and Atresia in Horse Mackerel and Mackerel	WKFATHOM	Cindy van Damme

Science Highlights



This example by Gastauer *et al* shows how spatial distribution of mesopelagic fishes can be obtained using blue whiting survey data. This is an excellent example of how additional information can be achieved with very little extra effort from our fisheries independent surveys.

4.4.5 ACOM and SCICOM Interaction

The SSG is a joint ACOM and SCICOM group. Nils Olav Handegard is also a SCICOM representative but Mike Armstrong is not in ACOM. The communication between SG and ACOM is therefore less efficient than is the case for SCICOM. In our opinion it is important to have representation in both committees, and we would like this to be clarified.

4.4.6 Perceived Needs and Gaps

The communication with the expert groups is challenging. There are no dedicated meetings to discuss issues that are common across groups, and webexes are not ideal for such discussions. Webexes work excellently for updating and following up, but not for establishing a common understanding. This is in particular important across survey groups, since they struggle with a lot of the same questions.

The uses of new technologies within ICES survey groups are very often restricted to vessel-based surveys. This is a field in which ICES has a long tradition and that it masters well. The inclusion of other kinds of sampling platforms are challenging, and a discussion on the strategy for including other data streams to our advisory processes is probably needed at a higher level than the SG responsible for the surveys.

There is a close collaboration with the Data Information Group and the ICES Data Centre, and specific tasks include the update of DATRAS to support pelagic hauls used to interpret acoustic surveys (WGIPS, WGBIFS) and to develop a database for interpreted

acoustic data (WGIPS, WGBIFS). There is also a request that ICES Data Centre develop databases to hold spatial ecosystem information (from WGACEGG).

4.5 Benchmark Steering Group (BSG; Jörn Schmidt, Germany)

4.5.1 Status of SG Terms of Reference (a summary of each ToR, results or planned action)

The Benchmark Steering Group (BSG) is a new steering group, founded in the frame of the new ICES Strategic Plan. It differs from other Steering Groups (SGs) in in that it has no specific multiannual Expert Groups under its umbrella, but that it steertsg the transfer of science into assessment and advice through increased communication and targeted workshops. All existing benchmarkrelated workshops will fall under its auspices. Founded in 2014, the BSG ToRs (see BSG SharePoint site) were approved by ACOM and SCICOM in June the same year. Since then, the co-chairs have organized the membership of the BSG. This consists of some ACOM and SCICOM members and other relevant experts with interest in the benchmarking process and who also chair or participate in ICES expert groups that should be closely associated with the benchmark process; a balance of EU and non-EU members has also been sought. The chairs of all other SGs and the ACOM vice-chairs are ex-officio members of the BSG. The first virtual meeting has taken place on 8 September 2014 (via WebEx) and a physical meeting was held on 16 September at the ASC 2014; the second WebEx meeting will take place in early November 2014. The current member list is available on the BSG SharePoint site).

4.5.2 EG Performance/MA ToR Progress

The first workshop under the BSG is the Workshop on Scoping for Integrated Baltic Cod Assessment (WKSIBCA), Gdynia, Poland, 1-3 October 2014 (this falls under the BSG ToR d.1). The main aim of this workshop is to find ways forward for the Baltic cod assessment and advice. In addition to examining progress on resolving issues identified in connection with the failed assessment this year. WKSIBCA is tasked with examining the existing ecological knowledge and finding ways of incorporating relevant aspects of this knowledge into the assessment and/or advice. Although the workshop is formally outside the period covered by this BSG report, it has already taken place at the time of writing. A full workshop report will be available on 15October.

The second workshop to be announced is the ACOM/SCICOM Workshop on Regional Seas Commissions and Integrated Ecosystem Assessment Scoping (WKRISCO) on 17-20 November 2014, Copenhagen, Denmark (this falls under the BSG ToRs d.3 and g.4). The workshop will have two main objectives: first to summarize progress made and methods used across the ICES Integrated Ecosystem Assessment (IEA) groups and second to scope the science needs for upcoming regional assessments with OSPAR and HELCOM (QSR and HOLAS).

ToRs for these workshops have been developed by BSG co-chairs, together with colleagues from the ICES Secretariat and the relevant scientists (as specified under BSG ToR f).

The first WebEx meeting was used to get to know the other members and to communicate the mandate for the group. The members expressed their comments and issues about the current process and their main focus with respect to the ToRs. This was extended at the meeting during the ASC. Following the ASC meeting, the areas of activity have been further defined and responsible persons nominated to lead on these activities. A list of action points can be found below.

4.5.3 ACOM and SCICOM Interaction

The activities of the BSG are targeting increased communication between SCICOM and ACOM expert groups (in line with BSG ToR b.1). The BSG being a joint ACOM/SCICOM Steering Group, the communication between both committees is almost automatically ensured through the co-chairs and the membership covering both committees and a series of crucial expert group chairs. BSG also reports to both committees and is represented in the joint leadership meeting.

4.5.4 Perceived Needs and Gaps

Being a new group, needs and gaps will be revealed during the work and communicated directly to the relevant bodies (SCICOM, ACOM, ICES Secretariat).

4.5.5 Action Points for BSG

Several tasks and the people to lead the work on these tasks were identified. Those chosen to lead should ensure close communication with the entire Benchmark Steering Group membership, so that everyone has the opportunity to contribute and to provide input to the tasks:

- Daniel Howell and Gudmundur Thordarson will take the lead on identifying gaps in the current benchmark processes. Be aware of current "Benchmark Guidelines" document and consider improvements. ICES Secretariat: Cristina Morgado (addresses BSG ToR g.2)
- Mike Armstrong and Ingeborg DeBois will take the lead on getting good integration with the data quality assurance groups (PGDATA). ICES Secretariat: Cristina Morgado (addresses BSG ToRs g.2 and d)
- Jörn Schmidt and Phil Levin will work on input to the WKRISCO workshop. ICES Secretariat: Mark Dickey-Collas (addresses BSG ToRs g.4 and d.3)
- Begoña Santos, Graham Pierce, Simon Northridge, Mark Tasker will work on integrating marine mammal bycatch advice with fish stocks advice. Be aware of the parallel initiative on sensitive species (e.g. elasmobranchs) proposed by Anna Rindorf after BSG open session on Wednesday afternoon and consider the required links. ICES Secretariat: Mark Dickey-Collas (addresses BSG ToRs g.3 and d.2)
- Daniel Howell: integration with WGSAM work with benchmark process. ICES Secretariat: Henrik Sparholt (addresses BSG ToRs g.2 and d.1)
- Sven Kupschus: integration with WGISDAA work with benchmark process. ICES Secretariat: Iñigo Martínez (addresses BSG ToRs g.2 and d)

5 Reports of SCICOM Operational Groups

5.1 Data and Information Group (DIG; Ingeborg de Boois, Netherlands)

The plenary meeting of the Data and Information Group (DIG) took place in Copenhagen, 26-28 May 2014. 16 people representing nine different countries, representatives from the OSPAR and HELCOM secretariats, the Head of ICES Data and Information, and nine members of ICES Data Centre joined the meeting.

During the meeting, the group reviewed the progress related to the ICES Data Plan and furthermore met up with ICES Data Centre, and discussed strategic issues related to VMS data, digital data citation, and the ICES Data Guidelines.

ICES Data Plan

Progress had been made on most topics scheduled for 2014..

ICES Data Centre

New tools and facilities that have been developed by the ICES Data Centre were presented and discussed.

The web application of the DATRAS database has been improved. One result is three application programme interfaces (APIs) that provide direct access to DATRAS data from other software, i.e. within R programmes.

The standard stock assessment graphs that go to the ICES assessment reports can be selected for certain years, stocks, and ecoregions and can be downloaded from the website. Only published and validated stock graphs can be downloaded.

ICES Data Centre received Estonian eggs data to add to the eggs and larvae database.

To answer to INSPIRE directive readiness, an online catalogue about services and data products hosted by ICES has been developed using a simple open source ESRI Geoportal. This service will be integrated with the catalogue of datasets (http://geo.ices.dk/geonetwork/srv/en/main.home) when development is complete.

Under the Science Committee (SCICOM) a call for operational oceanographic products and services was issued that shall, amongst other potential uses, feed into the integrated assessment groups (e.g. WGIAB, WGINOSE).

VMS Data

ICES has produced a VMS data policy stating the conditions of use for experts, to be signed by the chairs of groups using the data. DIG reviewed this document and additionally recommends that each expert working with VMS/logbook data signs it before getting access to the data and that all signatures are collated in the same document.

ICES Data Guidelines

A workshop on ICES Data Guidelines was scheduled for 2014. The workshop was cancelled and replaced by an intersessional DIG activity. In March 2014, a meeting took place between IODE and ICES to discuss ICES Data Guidelines in relation to the IODE/JCOMM/ICES clearing house. The ambition is to have all data and data management related documents, including manuals from instrument manufacturers and software (versions), available through the clearing house. It will thus provide an additional access point to ICES documents alongside ICES publications library.

Digital Data Citation

Journal citation is an accepted and well-established practice that gives due credit to work done by scientists and also signposts where others can find this information. In a similar way, citation of data can give proper credit to data providers who have made data available to the scientific community while also providing a mechanism for tracing back scientific knowledge to the data that underpins it. The living Introduction to Digital Citation document was presented to SCICOM in March 2014. DIG has prepared a next version of the document, which is made available to SCICOM as a separate document.

The eight principles of the Joint Declaration of Data Citation were reviewed at the plenary meeting in order to advise ICES on the adoption of the Declaration. The principles are grouped so as to facilitate understanding rather than according to any perceived criteria of importance. The group recommends that ICES and individuals adopt the eight principles. The DIG view on the eight principles is in the revised document on digital citation.

5.2 ICES Training Programme (Steven Cadrin, USA)

In 2014, the ICES Training Programme has, so far, run two successful training courses, reaching a total of 70 participants. There are another four courses planned for the autumn, three at the ICES HQ in Copenhagen and one in Paris. Four courses planned for the spring/summer had to be cancelled due to lack of participants. These cancellations may indicate a miscalculation of audience needs and, therefore, it may be necessary to review course selection processes.

Course offerings for 2014 – The Training Group met via WebEx to review course proposals, previous course reports, and guidance from SCICOM to select courses to be offered this year. Ten courses were initially advertised, but several were cancelled because of low registration and the SCICOM policy of maintaining a cost-neutral business model.

Training Programme:

- Introduction to Bayesian Inference in Fishery Science - 26-30 May, Helsinki, Finland (Cancelled)
- Communicating Science and Advice - 10-11 June, ICES, Copenhagen, Denmark (Cancelled)
- How to lead an effective technical meeting - 12-13 June, ICES, Copenhagen, Denmark (Cancelled)
- AD Model Builder and Stock Assessment - 16-20 June, ICES, Copenhagen, Denmark (Cancelled)
- Design and analysis of statistically sound catch sampling programmes - 23-27 June, ICES, Copenhagen, Denmark (Run with 21 participants)
- Stock Assessment (Introduction) - 14-18 July, ICES, Copenhagen, Denmark (Run with 40 participants)
- Social Science Methods for Natural Scientists - 13-16 October, ICES, Copenhagen, Denmark (Cancelled)
- Marine Spatial Planning: Processes and Tools - 27-31 October, ICES, Copenhagen, Denmark (Currently 18 applicants)
- Stock Assessment (Advanced) - 3-7 November, ICES, Copenhagen, Denmark (Currently 20 applicants)

- Application of Geostatistics to analyse spatially explicit Survey data in an Ecosystem Approach - 8-12 December, Fontainebleau, Centre de Geosciences Mines ParisTech (Currently 25 applicants)

Training Courses in 2015

Proposals for new and repeated courses are being considered. The Training Group is soliciting instructors for several other courses identified by SCICOM (e.g., climate change). The Training Group will meet at the ICES ASC to review course proposals and evaluate the business plan as well as continue developments on online teaching and university credits for ICES courses.

As part of keeping the courses relevant and useful to the ICES community, there has been communication within the ICES secretariat to identify which fields the courses should be aiming to target. This has resulted in requests for courses such as SAM modelling, "Opening the box"-type courses, and increased focus on Marine Spatial Planning.

E-learning

At the SCICOM midterm meeting SCICOM reiterated the action item for the Training Group to continue to explore the opportunities of e-learning/e-training as a new format within the Training Programme.

SCICOM was informed that the Secretariat has been very active in looking into different formats for e-learning.

A course on PBS mapping (GIS software) was given over WebEx and over five different time zones, and it was a real success. It would have been impossible to offer the course face-to-face. Courses with a similar setup will be taken into consideration by the Training Group.

5.3 Publications and Communications Group (PUBCOM, Myron Peck, Germany)

Key publication and communications activities and topics discussed at the PUBCOM meeting at the ASC included:

- The continued, high-quality publication of four CRRs, three TIMES, four Disease Leaflets, numerous press releases, advice books and popular advice sheets, one Annual Report, and ICES Insight.
- Initiating digital (online) only printing of Category 1 documents
- The continued growth and great success of the ICES Journal of Marine Science (IJMS)
- Change in the decision tree for symposium volumes in the ICES JMS supporting EiC independence.
- Increasing presence of ICES in social media

Publications- ICES Journal of Marine Science

The Impact Factor of ICES flagship publication increased from 2.277 to 2.525 in 2013, the highest in the journal's history. The journal's ranking increased from 7/49 titles to 5/50 titles in the ISI Fisheries category. Submissions have almost doubled in two years with an overall acceptance rate of approximately 45%. Over the period 2013-2014, nearly half of the submissions were solicited for inclusion in themed article sets. PUBCOM and OUP agree to monitor the metrics and development of theme sets over time.

Several new editors recruited during the past year (a total of 42) allow broad topical coverage and some redundancy in core areas. In short, all metrics of performance (turn-around times, submissions, acceptance rates, etc.) are extremely healthy. The journal is increasing in size (SCICOM decision March 2014) to meet page demands (225, 245, and 325 pages, in 2013, 2014 and (planned) 2015, respectively). PUBCOM and OUP representatives discussed future capacity considerations for the journal and the need for a sustainable strategy. OUP continues to explored different publishing models (e.g., online only, open-access, etc.).

Conveners of previous symposium volumes (2011 – present) will be provided with an online survey developed by OUP / the Secretariat to give feedback on their experience working with the journal. After discussion on a memo from the EiC requested by the General Secretary, PUBCOM recommended modifications to the decision tree used to select symposium volumes which was adopted by SCICOM.

In-house Publications

Although in-house publications are running smoothly, some resolutions have expired. The issue of author response times to editorial queries following submission was also discussed, and action items are outlined in the full PUBCOM report.

Four Cooperative Research Reports (editor Emory Anderson) were published this year and a further 14 are in various stages of planning and initial preparation by authors, which should insure a steady supply of material for publication over the next several years. While the majority of resolutions approved in 2012 and due to expire in 2014 are nearing or already in the review stage, one was recommended for cancellation, and the authors agree to resubmit the resolution.

Two new TIMES (editor Paul Keizer) manuscripts have been received since August 2013. Two manuscripts are awaiting publication. There a still a number of manuscripts with active resolutions pending.

Over the past year, three new Identification Leaflets for Diseases (editor Stephen Feist) have been published, and eight additional manuscripts have started to be prepared. As part of the ongoing activities of the WGPDMO, proposals for leaflets based on emerging disease reports will be agreed at its group meeting. There is also a plan to increase the rate at which existing leaflets are updated and thereafter maintain a 'rolling review' of leaflets every five years.

Since September 2013, two survey protocol manuals have been published on the ICES website as part of the Series of ICES Survey Protocols (SISP) (editor Katie Rice Eriksen), and five other post-review manuscripts have been received and are in production.

Communications

The website is the main source of ICES information and news and has a steady stream of users. In July, the Secretariat launched an interactive map displaying ICES popular advice, which has been very well-received. Popular versions of ecosystem overviews are planned for the map. PUBCOM requests to be more actively informed of ongoing developments with popular advice. Eleven publications/outreach products have been published using iPaper, including the ASC Call for Papers and Handbook. Historical CM-documents (from 1952 onwards, scanned by the Thuenen Institute in Germany) are expected to be available online shortly after the 2014 ASC. ICES is active on three social media channels and is gaining followers on all of them: as of 1 September, ICES has 4736 members in its LinkedIn group, 1311 "likes" on Facebook, and 991 followers on Twitter.

Review of Category 1 and Category 3 Publications

Category 1: PUBCOM recommended cancelling two expired resolutions for CRRs. One resolution to review and update plankton leaflets was not recommended at this time (PUBCOM and the Secretariat are working with the proposed editors on a revised submission). Three resolutions for new CRRs and one new TIMES were recommended to SCICOM. Category 3: In consultation with the EiC, PUBCOM recommended two symposium volumes in the ICES JMS (Targets and limits for long term fisheries management, October 2015 Athens, and the 6th Zooplankton Production Symposium, Bergen 2015).

Other Business

It was decided to phase out the printing of some publications series by 2015, specifically the CRRs and TIMES. Due to unforeseen financial constraints, this deadline to stop printing had to be moved forward to August 2014 – affecting both future CRRs and TIMES and those that are currently in production. Text has been drafted to explain the situation to authors and editors (see PUBCOM report). PUBCOM accepts the more immediate deadline for implementation and is satisfied with the continued efforts of the Secretariat in communicating this change.

Two additional people have been nominated to serve on PUBCOM. PUBCOM has received biographical information from both of these potential members.

5.4 ASC 2014, A Coruna, Spain (Head of Science Programme)

The venue was the Palexco Congress Centre, in A Coruña, Spain. The number of registered participants exceeded 600.

Opening Session:

The Opening Ceremony was attended by Mayor Carlos Negreira, the Secretary General for Science, Technology, and Innovation, Mª Luisa Poncela, and the President of Xunta de Galicia Alberto Nuñez Feijoo.

The 2014 Outstanding Achievement Award was presented to William A Carp, Science and Research Director for NOAA's Northeast Fisheries Science Centre, USA

The 2014 ICES Prix d'Excellence was presented to Carl J Walters, University of Bishish Colombia Fisheries Centre, Canada

The session was followed by the Open Lecture on prospects and opportunities in a changing marine science and policy landscape by Luis Valdés, Head of Ocean Sciences, IOC-UNESCO.

Plenary Speakers

Dr Ana Parma, Tuesday's plenary speaker from the Centro Nacional Patagónico, Argentina, gave a lecture on challenges and achievements in rebuilding fisheries: uncertainty, prescriptions and scientific advice.

On Wednesday morning, Philip Levin, from the Northwest Fisheries Science Centre, USA gave a talk on integrated science for integrated management: fairy tale or finally here?

The Programme for the Week

The programme continued during the week, with 17 Theme Sessions in four parallel sessions. In total there were 305 registered oral presentations. The programme also included a number of business and side meetings.

SCICOM Open Plenaries

On Monday morning there was a SCICOM Open Plenary entitled 'Strategic Scientists, shaping the future path of ICES together', which was open to all registered participants. The session included presentations and discussions.

The SCOCIM Open Session continued, feeding into three joint Open Sessions: Integrated Assessment and Ecosystem Surveys, the Steering Group on Ecosystem Processing and Dynamics / Strategic Initiative on Biodiversity Advice and Science, and an Open Session in Ecosystem Pressures and Impacts.

The SCICOM Open Sessions continued on Wednesday with the Strategic Initiative on Stock Assessment Methods, the Benchmark Steering Group (BSG) Open Session on finding ways forward for Integrated Ecosystem Understanding and Advice, and the ICES/PICES Strategic Initiative on Climate Change.

Poster Presentations

As well as presenting their work during the Tuesday evening Poster Session, poster presenters were given the opportunity to present their work using one or two slides in their repsective Theme Sessions. 105 posters were registered for display.

Closing Ceremony

During the Closing Session on Friday afternoon, the SCICOM Chair presented the Best Poster, Best Presentation, and Early Career Scientist awards and also handed out Service awards to outgoing chairs.

Travel Funds

19 early career scientists received travel funds this year. The funds varied from EUR 300 to EUR 600 depending on whether the candidate had raised other travel funds.

The conference material handed out to registered participants at the venue included a programme, a package of social events tickets, and a USB stick with electronic copies of extended abstracts and posters as well as expert group reports.

Conference App

The special conference application for mobile phones that was introduced during the 2012 ASC was also available to conference participants during this year's event. With this application, participants could access a conference schedule and floor plan as well as information on the speakers, sponsors, and exhibitors It also enabled participants to build their own agenda.

Conference Handbook

In an attempt to move away from printed material, this year the conference handbook was only available as an iPaper. This seemed to work well, with the handbook being downloaded almost 600 times.

Social Media and Communication

News and information about the conference was posted on ICES social media channels - Facebook, LinkedIn, and Twitter - during the conference week.

The conference proceedings will soon be available on the ICES website: http://www.ices.dk/publications/our-publications/Pages/CM-documents.aspx.

6 Reports of the SCICOM Strategic Initiatives

6.1 ICES/PICES Strategic Initiative on Climate Change effects on Marine Ecosystems (SICCME; Brian MacKenzie, Denmark, Manuel Barange, UK, Anne Hollowed, USA, PICES, and Suam Kim, ROK, PICES)

Introduction:

SICCME activities are contributing to the overall goals and objectives of both SICCME itself and many of those within the existing and new ICES and PICES science plans. This Strategic Initiative is co-chaired by Manuel Barange (UK), Anne Hollowed (USA), Suam Kim (ROK), and Brian MacKenzie (DK).

Recent activities (autumn 2013 [post-ICES and PICES ASCs] - present):

- The 2nd Scientific Meeting on Arctic Fish Stocks, Tromsø, Norway, 28-31 October 2013. Dissemination of results of ICES/PICES SICCME-Spatial workshop and potential roles and contributions of ICES to Arctic marine science by ICES Head of Science, Adi Kellermann.
- ESSAS meeting in April 2014, Copenhagen (co-chairs Ken Drinkwater, Franz Meueter, Sei-Ichi Saitoh).
- PICES FUTURE Open Science Meeting in April 2014. Several SICCME members will participate in the FUTURE OSM (see table below).
- SICCME co-organized several workshops at the PICES FUTURE workshop and Theme Sessions at the 2014 ICES ASC and PICES ASC. These are listed in Appendix 1 (table).

A major scientific event in 2014 was the release of the climate impacts report by the IPCC. SICCME invited authors of marine-related chapters (Matt Collins, WGI; Svein Sundby and Anne Hollowed, WGII; Jake Rice, WGIII) to present key findings at the SICCME open session meeting at the 2014 ICES ASC. These presentations provided the ICES climate change community with direct insight into the report's contents and an opportunity to discuss the findings with report authors.

Activities in 2014-2015:

The 3rd Symposium on Effects of Climate Change on the World's Oceans, Brazil, 2015. Further planning of the scientific content of the meeting is now completed. Session topics and convenors have been identified. Announcementsand posters are now available from the symposium organizers, and the website has been set up.

A new Workshop on Modelling Effects of Climate Change on Fish and Fisheries (WKMODCLIF), is being organized by NOAA (USA) and IMR (Norway). ICES has been asked to endorse and support the workshop, which will organized jointly by PICES and ICES. The workshop will be chaired by Francisco Werner (USA), Kirstin Holsman (USA), Michio Kawamiya (JPN), Trond Kristiansen (NO), Myron Peck (DE), and Anne Hollowed (USA), and will meet in USA, August 2015.

There will be one or two Theme Sessions at the 2015 ASC organized by SICCME.

SICCME Leadership

Three of the co-chairs of SICCME (two from ICES and one from PICES) are scheduled to end their terms in 2014-2015.

The terms of the two ICES co-chairs are scheduled to end at the end of 2015 (i.e., following completion of the three-year standard term and a one-year extension at request

of the SCICOM Chair.). As it will be advantageous for maintaining continuity, attempts will be made to stagger the changes in SICCME co-chairs over several months, given institutional support and commitments. Although M. Barange could continue until the end of 2015, he would step down after the Brazil symposium, should a new co-chair be available to start at that time. B. MacKenzie will stay on until the end of 2015. The ICES community is encouraged to begin identifying candidates for both co-chair vacancies in the coming months.

One of the PICES co-chairs, S. Kim, will also rotate off at end of 2014, or after the Brazil symposium. A candidate for the PICES co-chair vacancy has been identified, and is waiting for approval from national authorities.

ACTIVITY

Publications:

Hollowed, A. B., Sundby, S. 2014. Change is coming to the northern oceans. Science 344: 1084-1086

Barange, M., G. Merino, J.L. Blanchard, J. Scholtens, J. Harle, E.H. Allison, J.I. Allen, J. Holt, S. Jennings. (2014). Impacts of climate change on marine ecosystem production in fisheries-dependent societies. Nature Climate Change 4:211-216

Kim, S., Hollowed, A. B., Barange, M., MacKenzie, B. R. Recent development of International Program on climate change effects on marine ecosystems. Oceanography (submitted)

2014 Conferences:

Ecosystem Studies of Sub-Arctic Seas (ESSAS) Annual Science Meeting, April 7-9, 2014, Copenhagen.

2014 Theme and topic sessions, working groups

Physical and biological consequences of North Atlantic circulation patterns; Theme Session Q, ICES ASC, Spain, 2014. Conveners: Ken Drinkwater (Norway), Cesar Gonzalez-Pola (Spain), Olafur Astthorsson (Iceland) and Seth Danielson (PICES, USA)

Topic Session S1: Identifying multiple pressures and system responses in North Pacific marine ecosystems, PICES FUTURE Open Science meeting April 15-18, 2014, Hawaii. Co-convenors M. Takahashi (S-CCME, PICES) and others

Topic Session S2: Regional climate modeling in the North Pacific, PICES FUTURE Open Science meeting, April 15-18, 2014, Hawaii. Co-convenors M. Foreman (S-CCME, PICES) and others

Topic Session S3: Challenges in communicating science and engaging the public, PICES FUTURE Open Science meeting, April 15-18, 2014, Hawaii. Co-convenors S. Ito (S-CCME, PICES) and others

Topic Session S5: Mechanisms of change: Processes behind climate variability in the North Pacific, PICES FUTURE Open Science meeting, April 15-18, 2014, Hawaii. Co-convenors M. Foreman (S-CCME, PICES) and others

Topic Session S7: Strategies for ecosystem management in a changing climate. PICES FUTURE Open Science meeting, April 15-18, 2014, Hawaii. Co-conveners: Manuel Barange, A. Hollowed, Suam Kim (SICCME co-chairs)

Workshop 2: Bridging the divide between models and decision-making: The role of uncertainty in the uptake of forecasts by decision makers, PICES FUTURE Open Science meeting, April 13, 2014, Hawaii. Co-conveners: S. Ito (S-CCME, PICES), M. Takahashi (S-CCME, PICES), and others

Workshop 3: Climate change and ecosystem-based management of living marine resources: Appraising and advancing key modeling tools, PICES FUTURE Open Science meeting, April 13, 2014, Hawaii. Co-Convenors M. Peck (SICCME, ICES),A. Hollowed (SICCME co-chair), and others

Workshop 4: Ecosystem projection model inter-comparison and assessment of climate change impacts on global fish and fisheries. PICES FUTURE Open Science meeting, April 13-14, 2014, Hawaii. Co-Convenors A. Hollowed (SICCME co-chair) and others

ICES SICCME Open Session on IPCC AR5 Report, Sept. 17, 2014, ICES ASC, Spain. Four speakers presenting key results from the recent IPCC Climate Change assessment.

Topic Session S5: Ecosystem considerations in fishery management of cod and other important demersal species. PICES Annual Science Meeting, Korea. Co-convenors Jacquelynne King (S-CCME, PICES), Sukgeun Jung (S-CCME, PICES) Ken Drinkwater (SICCME, ICES), and others

Topic Session S6: Climate change impacts on spatial distributions of marine fish and shellfish. PICES Annual Science Meeting, Korea. Co-convenors Anne Hollowed (SICCME co-chair) and others

Topic Session S7: Recent Assessments of Climate Change Impacts on Marine Ecosystems. PICES 2014 Annual Science Meeting, Korea. Co-convenors: Anne B. Hollowed (SICCME co-chair), Jake Rice (SICCME, ICES, Canada), Sukgeun Jung (S-CCME, Korea), and Hans Pörtner (Germany)

Topic Session S9: Variability in advection and its biological consequences for Subarctic and Arctic ecosystems. PICES 2014 Annual Science Meeting, Korea. Co-convenors: Ken Drinkwater (SICCME, PICES, Canada)

Topic Session S10: Regional climate modeling in the North Pacific. PICES 2014 Annual Science Meeting, Korea. Co-convenors: S. Ito (S-CCME, Japan), M. Foreman (S-CCME, Canada), and others

Dynamics of pelagic fish in the North Pacific under climate change; PICES 2014 Annual Science Meeting, Korea, 11 or 12 October. Co-convenors Gerard DiNardo (ISC) and Suam Kim (PICES)

2015 and beyond:

Co-planning and -organising 3rd Effects of Climate Change on the World's Oceans symposium, Brazil, 2015

-all Theme Sessions and convenors now identified.

-meeting announcements posters are now available and being distributed, and the website has been set up.

Theme Session S9: Impact of climate change on ecosystem carrying capacity via food-web spatial relocations. 3rd Effects of Climate Change on the World's Oceans symposium, Brazil, 2015. Co-convenor B. MacKenzie (SICCME co-chair) and others

Theme Session S10: Forecasting climate change impacts on fish populations and fisheries. 3rd Effects of Climate Change on the World's Oceans symposium, Brazil, 2015. Co-convenor A. Hollowed (SICCME co-chair), J. King (S-CCME, Canada), and others

Theme Session S11: Impacts on coastal communities. 3rd Effects of Climate Change on the World's Oceans symposium, Brazil, 2015. Co-convenor M. Barange (SICCME co-chair)

PICES/ICES Workshop on Modelling Effects of Climate Change on Fish and Fisheries (WKMODCLIF) being organized by NOAA (USA) and IMR (Norway) for August 2015, USA. Co-chairs Francisco Werner (USA), Kirstin Holsman (USA), Michio Kawamiya (JPN), Trond Kristiansen (NO), Myron Peck (DE), and Anne Hollowed (USA).

6.2 Strategic Initiative on Biodiversity Science and Advice (SIBAS; Henn Ojaveer, SCICOM, and Mark Tasker, ACOM)

Summary

Policy in relation to marine biodiversity and its conservation continues to develop throughout the world. Many of these policies have rather tenuous links to the management of human activities with the creation of Marine Protected Areas being one often inappropriate outcome. ICES is in a good position, being both firmly science-based and in a position as a valued management advisory body to help address the integration of biodiversity issues into the management of human activities. Several of the multiple biodiversity-related expert groups in ICES have already been given SIBAS-related ToR's and this process is continuing. The ultimate aim of these activities is to address the priority #1 subject of SIBAS: **develop and test state and pressure indicators, and**

establish links between them. To make the work more efficient and allow substantial further advancement in coordinated and systematic manner, **securing finances for the work is essential**.

Activities Undertaken since March 2014:

Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)

- Webex meeting to discuss ICES participation in IPBES activities. As marine issues are only very poorly represented in the IPBES workplan 2014-2018, ICES involvement cannot be very visible or major. It was suggested to continue dialogue with IPBES and contribute wherever and whenever possible and in terms of what is meaningful for ICES.
- ICES can contribute to IPBES jointly with its partners (CIESM, PICES, Arctic groups). This potential needs to be also discussed with partners.
- Registration for attendance of the Third Plenary to be held from 12 to 17 January 2015 in Bonn, Germany.

Suggested further action: SCICOM-nominated co-chair to lead continuing dialogue with IPBES.

Cooperation with Convention on Biological Diversity (CBD)

- Approaches have been made to CBD to co-operate.
- On behalf of OSPAR, ICES has peer reviewed proposals for Ecological and Biologically Significant Areas (EBSAs) to be created under CBD. Suggestions (by ICES Member Countries) that EBSAs in other waters be similarly reviewed have been resisted by the CBD Secretariat.
- Other marine topics being addressed by CBD at present include underwater noise and marine debris (no ICES expert groups), marine acidification (ICES has not addressed) and marine spatial planning.

Suggested further action: none proposed at the moment. ICES Secretariat will continue to monitor the situation and make recommendations if appropriate.

World Conference on Marine Biodiversity (Qingdao, China, 12-16 October 2014).ICES suggested special session on 'Linking marine biodiversity science and advice' (co-chairs H. Ojaveer, P. Snelgrove and T Crowe) was accepted and will be held as planned. The session agenda contains 8 oral presentations (including an ICES WGBIODIV presentation by Oscar Bos as a keynote talk) and several posters.

Biodiversity-related advice provided in 2014

Under arrangements with the European Commission, NEAFC, and OSPAR, advice has been provided in 2014 on:

- cetacean bycatch (based on the work of WGBYC),
- MSFD Descriptor 4 on foodwebs (WKIND, WKFooWI, WGECO),
- the effects of mariculture on wild fish (WGMME, WGAGFM, WGAQUA),
- the implementation of the MSFD in relation to marine mammals (WGMME),
- the spatial representation of sediment monitoring stations (WGMS),
- vulnerable marine ecosystems (VME) in the high seas (WGDEC)
- the use of the Vessel Monitoring System (VMS) to estimate benthic impacts (WGSFD)

The advice in relation to bycatch, foodwebs and marine mammals was provided in relation to indicators, though some of these need to be reviewed in association with the relevant fisheries regulators.

Suggested further action: the usual further discussions with those commissioning advice should include discussions over the linking together of indicators, both in terms of cumulative assessments and the use of indicators in management of human activities.

Cooperation with CIESM and PICES on bioinvasions

- ICES ASC 2014 Theme Session on 'The increasing importance of biofouling for marine invasions: an ecosystem altering mechanism' (co-conveners Andrea Sneekes, (the Netherlands), Francis Kerckhof (Belgium), and Thomas Therriault (PICES, Canada));
- Cooperation to be discussed during the ASC 2014.

Suggested further action: SCICOM-nominated co-chair to continue efforts with PICES and CIESM cooperation.

Future activities

It has been suggested that a second ICES workshop on marine biodiversity (WKMARBIO II) be arranged:

- to summarize recent developments in ICES and elsewhere on biodiversity-related state and pressure indicators (both single and cumulative);
- to investigate links between biodiversity state and pressure indicators,
- to analyse recent advancements in biodiversity science against the management and policy needs,
- based on gap analysis design future agenda of SIBAS.

Speakers from ICES community as well as outside (incl. PICES, CIESM) should be invited, together with representatives from stakeholder groups (incl. from Regional Seas Commissions, EC, EEA).

6.3 Strategic Initiative for Stock Assessment Methods (SISAM; Steve Cadrin, USA, and Ciaran Kelly, Ireland)

The ICES Strategic Initiative for Stock Assessment Methods (SISAM) was designed to ensure that scientists can apply the best stock assessment methods when developing management advice for fisheries. The first stage of SISAM culminated in a simulation-based workshop to evaluate performance of stock assessment methods at the World Conference on Stock Assessment Methods (WCSAM, 17-19 July 2013, Boston USA). The second stage of SISAM involves continued coordination with Regional Fishery Management Organizations and national agencies, the development of "good practice" guidelines, and further evaluation of model performance. Progress was made in 1) the dissemination of scientific advancements from WCSAM, 2) planning for further simulation-testing of stock assessment methods, 3) global coordination of advancement in stock assessment methods, and 4) development of best practices guidance for stock assessment methods.

In addition to the conference report, 31 manuscripts were submitted to a special volume of the ICES Journal of Marine Science, with twenty-six papers having already been accepted for publication in its January 2015 volume. Overarching themes and future

perspectives are being reviewed in an introductory paper by Cadrin and Dickey-Collas, co-chairs of the first stage of SISAM. Following up on the workshop that preceded WCSAM, a group of stock assessment scientists met at the 2013 ICES Annual Science Conference, and the ICES Working Group on Methods of Fish Stock Assessments (WGMG) offered guidance on the next steps for simulation-based evaluation of stock assessment methods. The general poor performance of stock assessment methods for recovering the dynamics of simulated population and fisheries suggests that further simulation-based evaluations should focus on management procedures that are robust to typical assessment performance or more narrowly focused simulations that are tailored to specific applications and problems. Further feedback was solicited at the SISAM open session of the 2014 ASC. Members of the steering committee formed for the first phase of SISAM and WCSAM (representing many ICES Member Countries and Regional Fishery Management Organizations) have confirmed their interest in maintaining their leadership roles for the next stage of SISAM. Coordination with global activities on advancing stock assessment methods continues.

7 Conclusions (SCICOM Chair)

- SSGs conclude that EGs can and will fulfill their stipulated ToRs.
- Performance measurement exercise shows ongoing to good progress in implementing the Science Plan, noting that some areas starting up are depending on a linear process in the IEA products that is under development.
- EGs produce quality end products such as primary publications, CRRs, leaflets, guidelines, and advice.
- EGs are giving heads-up on lacking attendance in groups and also the need to engage specific expertise. Action is needed on all levels so as not to deteriorate the pool of experts in ICES science groups.
- The Strategic Initiatives play a major role in ICES positioning in a global context. They are prepared to continue, and new funding for SI has been requested.
- New Strategic Initiatives could be considered.
- SCICOM intersessional work is becoming more important and new ways of operating are under development. The SCICOM Forum will be established as a means for discussion and decisions.
- The SCICOM, SSG, and SI chairs today form the SCICOM business group that operates together with the ACOM leadership group on a strategic level. To level the two groups, SCICOM will suggest that its business group be renamed the SCICOM leadership group.
- The Science Fund is an important complement to ICES Science and should be considered as a long-term approach.
- Cooperation with ACOM is evidently stronger than ever and will continue to develop.
- ICES position in the marine science community is renewed but needs to continuously develop and break new ground in order to fulfil the vision of the Science Plan.
- Science cooperation with ICES partners should be further enhanced and developed.
- The ASC is an important event for spreading ICES Science but also to develop the science portfolio and expert community. SCICOM will look at how the ASC and the Open Sessions can be strengthened.

The next steps in the implementation of the Science Plan will consider the performance evaluation exercise mentioned above and shown in **Annex 1**. The focus will be on the science objectives and priority areas where activities either haven't started or have just started. The SSGs chairs will in their next joint meeting evaluate the performance measures and discuss and identify priority areas that are dependent on the linear process delivery of IEAs. Priority areas that have not started yet should be considered for appropriate kick-off activites. A road map should be established for those activities that have been decided upon in order to further implement the Science Plan.

Overall SCICOM concludes that the Science Plan is approaching the end of its first year with implementation in the requested direction. The launching of the new Science Plan has been well received in the marine science community. The SCICOM chair would like to thank the SCICOM members and Chairs of Steering Groups, Strategic Initiatives and Operational Groups for their dedication, responsiveness and hard work in the first year of the new Science Plan.

Annex 1: The ICES Strategic Plan (2014–2018) - Implementation - Linking Science, Advice, Data and Information and Secretariat

The Science Picture after 9 months - A first look at Performance - A Qualitative Approach

OVERVIEW

	Ecosystem Processes and Dynamics **EPD**	***Ecosystem Pressures and Impacts*** **EPI**	***Integrated Ecosystem Assessments*** **IEA**	***Integrated Observation and Monitoring Programme*** **IEOM**
1	4	1	2	0
2	1	2	2	2
3	4	3	2	3
4	0	1	1	2
5	0	1	0	0
SPA*	***N = 9***	***N = 8***	***N = 7***	***N = 7***

1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well

** SPA = Science Priority Areas*

Building a Foundation of Science

GOAL 1 - Develop an integrated, interdisciplinary understanding of the structure, dynamics, and the resilience and response of marine ecosystems to change.

GOAL 2 - Understand the relationships between human activities and marine ecosystems, estimate pressures and impacts, and develop science-based, sustainable pathways.

Annex 2: 2014 List of ICES SCICOM Expert Groups that were dissolved, established, renamed or that changed committee

Type of Action	Name	Chair – Outgoing	Chair – Incoming
Change of Chairs	***SCICOM Steering/Operational Groups/Strategic Initiatives***		
SIBAS	Strategic Initiative on Biodiversity Advice and Science	Henn Ojaveer, Estonia	To be decided
SSGEPI	ICES Steering Group on Ecosystem Pressures and Impacts	Daniel Duplisea, Canada	Henn Ojaveer, Estonia
Established	***Expert Groups***		
SSGIEOM	Planning Group on Data Needs for Assessments and Advice (PGDATA)		Mike Armstrong, UK, and Marie Storr-Paulsen, DK
SSGIEOM	Working Group on Recreational Fisheries Surveys (WGRFS)		Harry V. Strehlow, Germany and Kieran Hyder, UK
SSGEPD	Working Group on Data Poor Diadromous Fish (WGDAM)		Erwin Winter, Netherlands, and Karen Wilson, USA
SSGEPI	Working Group on Risks of Maritime Activities in the Baltic Sea (WGMABS)		Sakari Kuikka, Finland
SSGIEOM	Working Group on Biological Parameters (WGBIOP)		Francesca Vitale, Sweden and Lotte Worsøe Clausen, Denmark
Change of Chairs	***Expert Groups***		
SSGIEA	ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea (WGIAB)	Maciej Tomczak (Sweden)	Laura Uusitalo, Finland
SSGIEOM	Baltic International Fish Survey Working Group (WGBIFS)	Olavi Kaljuste, Sweden	Wlodzimierz Grygiel, Poland
SSGIEOM	Working Group on Improving use of Survey Data for Assessment and Advice (WGISDAA)	Dave Reid, Ireland, & Stephen Smith, Canada	Sven Kupschus, UK
SSGEPD	Working Group on Harmful Algal Bloom Dynamics (WGHABD)	Bengt Karlson, Sweden	Eileen Bresnan, UK
SSGEPD	Benthos Ecology Working Group (BEWG)	Steven Degraer, Belgium	Silvana Birchenough, UK
SSGEPD	Working Group on Oceanic Hydrography (WGOH)	Kjell Arne Mork, Norway, and Stephen Dye, UK	TBA
SSGEPD	Working Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species (WGRECORDS)	Atso Romakkaniemi (Finland), Niall Ó Maoiléidigh (UK)	Russell Poole, Ireland, and Johan Dannewitz, Sweden
SSGEPI	Marine Chemistry Working Group (MCWG)		Koen Parmentier, Belgium (incoming Co-Chair)

Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGEPI	Working Group on Marine Sediment (WGMS)	Lucia Vinas, Portugal (outgoing Co-Chair)	Celine Tixier, France (incoming Co-Chair)
SSGEPI	Working Group on Application of Genetics in Fisheries and Mariculture (WGAGFM)	Dorte Bekkevold, Denmark	Gary R Carvalho, UK
Dissolved	***Expert Groups***		
SSGIEOM	Workshop on ICES Data Guidelines (WKIDG)	Lesley Rickards, UK, Sjur Ringheim Lid, Norway & Taco de Bruin, NL	
SSGIEOM	Workshop on the identification of clupeoid larvae (WKIDCLUP)	Cindy van Damme, NL and Matthias Kloppmann, Germany	
SSGEPD	Working group on Seabird Ecology (WGSE)	Richard Veit, USA	
SSGEPD	Workshop on Lampreys and Shads (WKLS) [to be dissolved after the meeting on 27-29 Nov 2014]	Eric Rochard, France, Pedro Raposo de Almeida, Portugal	
SSGEPD	Workshop on Growth-increment Chronologies in Marine Fish: climate-ecosystem interactions in the North Atlantic (WKGIC) [to be dissolved after the meeting on 2-3 Dec 2014]	Bryan Black, USA, and Christoph Stransky, Germany	
SSGEPD	Workshop of a Planning Group on the Monitoring of Eel Quality under the subject "Development of standardized and harmonized protocols for the estimation of eel quality" (WKPGMEQ) [to be dissolved after the meeting on 20-22 Jan 2015]	Claude Belpaire, Belgium, and Olga Haenen, The Netherlands	
SSGEPI	Workshop on Risk Assessment for Spatial Management (WKRASM)	Rob Gerits, NL, and Roland Cormier, Canada	
SSGEPI	Joint CIESM/ICES Workshop on Mnemiopsis Science (JWMS)	Sophie Pitois, UK (ICES) and Tamara Shiganova, Russia (CIESM)	
New Workshops			
SSGIEOM	Workshop on Age reading of Chub Mackerel (*Scomber Colias*) (WKARCM)		Andreia Silva, Portugal & Maria Rosario Navarro, Spain
SSGIEOM	Workshop on Age Reading of Dab (*Limanda limanda*) (WKARDAB2)		Holger Haslob, Germany & Loes Bolle, NL
SSGIEOM	Workshop on Age reading of seabass (*Dicentyrarchus labrax*) (WKARDL)		Kélig Mahé, France & Mark Etherton, UK

Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGIEOM	Workshop on Age reading of horse mackerel, Mediterranean horse mackerel and blue jack mackerel (*Trachurus trachurus*, *T. mediterraneus* and *T. pictatus*) (WKHARHOM2)		Pierluigi Carbonara, Italy and Kélig Mahé, France
SSGIEOM	Workshop on Age reading of saithe (*Pollichus virens*) (WKARPV)		Kélig Mahé, France and Jane Godiksen, Norway
SSGIEOM	Workshop on evaluating current national acoustic abundance estimation methods for HERAS surveys (WKEVAL)		Ciaran O'Donnell, Ireland
SSGIEOM	Workshop on the maturity staging of mackerel and horse mackerel (WKMSMAC2)		Cindy van Damme, NL and Pierluigi Carbonara, Italy
SSGIEOM	Workshop on scrutinisation procedures for pelagic ecosystem surveys (WKSCRUT)		Matthias Schaber, Germany
SSGIEOM	Workshop on review of the ecosystem survey requirements (WKSUREQ)		David Reid, Ireland and Nils-Olav Handegard,Norway
SSGEPD	Workshop of the Working Group on Eel and the Working Group on Biological Effects of Contaminants (WKBECEEL)		Claude Belpaire, Belgium, and John Thain, UK
SSGEPD	ICES/PICES Workshop on Modelling Effects of Climate Change on Fish and Fisheries (WKSICCME_Project)		Francisco Werner, USA; Kirstin Holsman, USA; Michio Kawamiya, Japan; Trond Kristiansen, Norway, Myron Peck, Germany; and Anne Hollowed, USA
SSGEPI	Workshop on Probabilistic Assessments for Spatial Management (WKPASM)		Vanessa Stelzenmüller, Germany, and Roland Cormier, Canada
SSGEPI	Workshop on Conflicts and Coexistence in Marine Spatial Planning (WKCCMSP)		Andreas Kannen, Germany, and Kira Gee, Germany
EGs Renamed			
SSGEPI	**Study Group on Socio-Economic Dimensions of Aquaculture** (SGSA) will be renamed **Working Group on Social Dimensions of Aquaculture** (WGSDA)		Gesche Krause, Germany