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ICES International Council for the Exploration of the Sea
CIEM Conseil International pour l'Exploration de la Mer

ICES 104th Statutory Draft Meeting Agenda

Copenhagen, Denmark

Chair: Cornelius Hammer

19–20 October 2016

Day 1 (9:00 – 17:15)

Followed by a reception at the US Embassy

Day 2 (8:30 – 15:00)

1 Adopt the Agenda

The meeting is invited to adopt the agenda.

1.1 President's review

The Meeting is invited to review the follow-up, in relation to actions decided at the 2015 Council meeting.

2 ICES Strategic Plan and Implementation plans

2.1 Midway review of ICES Strategic Plan

The meeting will be updated on progress towards achieving the goals of ICES Strategic Plan and further action needed.

2.2 Council–SCICOM Working Group on ICES Science

Tammo Bult and Pierre Petitgas, Co-chairs of CSWGIS will report on the work of the group including the components:

- Strengthening the Science Leadership
- Review of ICES Science
- Science Funding

Council is invited to discuss and approve the Bureau recommendations:

- to support the SCICOM proposal to use 500,000 DKK (core funding/annually) for supporting the work of SSG Chairs, and to request SCICOM under the incoming SCICOM Chair to elaborate a work plan and framework administrative guidelines;

- to support the SCICOM proposal to use 50,000 DKK (core funding/annually) for a Science Working Group Chairs meeting;

- to respond to the SCICOM request for funding of Strategic Initiatives, action areas, and cooperation with scientific partners with a total of 350,000 DKK (from equity) for three years, 2017, 2018, and 2019;

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- to discontinue the Science Fund;

- to invest 1.3 million DKK, from equity, in an introductory training package for chairs of expert working groups, activities to strengthen and streamline data and information products for the ecosystem approach, and support to the production of Aquaculture overviews. This includes a reallocation of 300.000 DKK set-aside for demonstration advice by 2015 Council meeting.

3 Finance

3.1 Finance Committee Report

The meeting is invited to comment and approve the report from the Finance Committee, as well as to:

- approve the final accounts 2015, including Audit Book;
- vote on the proposed budget for 2017, noting that the national contributions have already been decided;
- discuss a long-term strategy for achieving increases in the national contributions, including how to deal with the vote on the forecast budget for 2018.
- Take note of the recommendations regarding the level of the Capital Reserve fund and the discontinuation of the Science Fund.

3.2 New Clients and MoUs

Council will be informed about the status of negotiations with Member Countries wishing to also be recognized as "Advice requesters".

Council will be invited to consider a discussion document on MoU income outlining the issues and reflecting on the products, the processes to deliver these products, their cost, the interaction between science and advice, and the relation to ICES Strategic Plan. Council will be invited to discuss how to attract (new) clients for new strategic areas.

3.3 Project update

The Council will be provided an update on the status of ICES involvement in projects and the outcome of considerations on how ICES can be more proactively involved in projects.

3.3.1 ICES Project participation

The Council will be invited to approve, based on the current project policy that ICES proactively seeks the lead on Coordinated Support Action (CSA) projects.

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4 Report from the Council Strategic Initiative on the Marine Strategy Framework Directive and Ecosystem Approach (CSIMSFDEA)

The Chair of CSIMSFDEA, Eugene Nixon will be invited to update Council on the group's activities.

5 Reports from the Council Strategic Initiative on Maritime Trans-Atlantic Cooperation (CSIMTC)

First Vice-President Fritz Köster will report on the activities of CSIMTC.

Council will also be updated on, and invited to discuss, on the ICES contribution to the Atlantic Ocean Research Alliance.

6 Elections and Appointments

6.1 Vice-Presidents

Council is invited to nominate and elect one new Vice-president. Vice-President Johann Sigurjónsson (IS) has stepped down as ICES Delegate.

To facilitate the election process, nominations will occur on the first day of the meeting. If nominated and willing to stand, potential candidates are encouraged to introduce themselves and give a short introduction to how they will contribute to the work of Bureau. The election procedure will then be completed on the second day of the meeting.

Rules of Procedure

Rule 11

i) The First Vice-President shall be elected for a period of three years and shall not be eligible for re-election for the immediately succeeding term;

ii) Any other Vice-President shall be elected for a period of three years and shall not be eligible for re-election for the immediately succeeding term;

iii) Any Vice-President may resign at any time and shall vacate office on ceasing to be a Delegate;

iv) In the event of an office of any Vice-President falling vacant the Council shall elect a new Vice-President at its next meeting.

Rule 5 (iv)

At any time not more than one member of the Bureau shall be from the same member country. (Currently Bureau consists of President Cornelius Hammer, Germany, First-Vice President Fritz Köster, Denmark, Pierre Petitgas, France, Tammo Bult, Netherlands, Kai Myrberg, Finland, and Bill Karp, USA).

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6.2 Appointment of Science and Advisory Committee Chairs

Council will be invited to appoint the ACOM Chair according to the outcome of the recruitment panel, and thus approving that the process has been carried out according to the established procedure.

Council will be invited to appoint the SCICOM Chair according to the outcome of the recruitment panel, and thus approving that the process has been carried out according to the established procedure.

With reference to the decision by the 2015 Council meeting, and the approved changes to the ACOM Chair nomination process, the General Secretary will make similar required changes to the Rules of Procedure for the SCICOM Chair nomination process.

Rules of Procedure[1]

Current Rule 30 (i)

The Chair and Vice-Chair(s) of the Science Committee shall be nominated by the Advisory Committee and appointed by the Council. The Chair and Vice Chair(s) shall hold office for a term of three years, with the possibility of a one year extension, subject to approval by the Council. They shall assume office on the first day of January next following their election. They shall not be eligible for re-election for the immediately succeeding term.).

Revised Rule 30, (iii)

i) The Chair of the Science Committee shall be **nominated** by the Science Committee and **appointed** by the Council, according to the established procedure[2]. The Chair shall hold office for a term of three years, with the possibility of a three year extension, subject to approval by the Council. They shall assume office on the first day of January next following their election. They shall not be eligible for re-election for the immediately succeeding term.

iv) If, for any reason, the Chair of any Committee is unable to complete his/her term of office, or is temporarily unable to act, the President shall **nominate** an interim Chair who will serve for the remainder of the year, or for such shorter period as may be decided by the President. The Committee shall nominate a new Chair at the first opportunity, who will be appointed by Council. The interim Chair will be eligible for appointment as Chair.

6.3 Appointment of Awards Committee Chair

Council will be invited to appoint a new Chair for the Awards Committee, noting that the current Council (and ACOM) member Carl O'Brien has confirmed his willingness to become chair.

Guidelines for ICES Expert Groups:

1 http://www.ices.dk/explore-us/who-we-are/Documents/ICES_Rules_of_Procedure.pdf

2 The recruitment procedure as agreed by Council in 2015.

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The membership of the Awards Committee is selected from SCICOM members for a three-year term. The Chair is appointed by Council for a similar length of service, subject to re-appointment.

7 ICES Science

7.1 Report from the SCICOM Chair

7.1.1 Annual Progress Report

The Chair of SCICOM, Yvonne Walther, is invited to give a report on the activities of SCICOM, with a specific focus on activities carried out to further the implementation of the ICES Strategic Plan as well as issues for which support is needed in order ensure progress towards the ICES Strategic Plan.

The meeting will be informed about the annual science work, including the ToRs for the expert groups, and an update on SSGs, and training.

7.1.2 Aquaculture

The Council will be updated on latest developments within Aquaculture, and invited to discuss how to further ICES role.

7.1.3 Arctic

The Council will be updated on latest developments within the Arctic, including ICES participation in various meetings under the Arctic Council and the Scientific Experts on Fish Stocks in the Central Arctic Ocean, and invited to discuss how to develop ICES role, including the different potentials for how new Member Countries/scientist from these countries can take part in the work of ICES.

7.2 2017 and forthcoming Annual Science Conferences

The 2017 Annual Science Conference will be hosted by the US. The 2018 Annual Science Conference will be hosted by Germany.

Proposals for hosting future ASCs will be welcomed.

8 ICES Advisory Services

8.1 Report from the ACOM Chair

8.1.1 Annual Progress Report

The Chair of the Advisory Committee, Eskild Kirkegaard, is invited to give a report on the activities of ACOM, with a specific focus on activities carried out to further the implementation of the ICES Strategic Plan as well as issues for which support is required to ensure continued progress.

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8.1.2 Resolutions/ToRs

The meeting will be informed about the annual advisory work, and the ToRs for the expert groups.

8.1.3 Progress on the pilot project on update assessments

Council will be provided an update on the project: Transparent Assessment Framework.

9 Data and Information Services

The Head of Data and Information, Neil Holdsworth will provide a 2016 status report on the activities and deliverables by Data and Information Group and the Data and Information Centre.

9.1 Updated ICES Data Policy

Council will be invited to approve an updated ICES Data policy.

10 Secretariat

The General Secretary, Anne Christine Brusendorff will provide a 2016 status report on the activities and deliverables by the Secretariat.

10.1.1 Resource Coordination Tool (RCT) and Content Administration for Reports and Advice (CARA)

Information will be submitted for consideration by Council regarding the further progress on the development of the tools for streamlining working procedures.

11 Any other Business

11.1 Conflict of Interest

Council will be requested to approve a Code of Conduct and Conflict of Interest (CoI) policy for ICES.

11.2 Date of the next meeting

The next statutory meeting will take place 18–19 October 2017.

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Council Meeting

October 2016

CM 2016 Del 1.1

Agenda Item 1.1

Follow-up from Council 103

Council is invited to take note that actions agreed at the 103rd meeting of Council have been followed up, or are in progress (included to the agenda of the 104th meeting.

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Item # Council 103 minutes	**Description/Action**	**Follow-up** (Agenda Item # (AI), refer to the Council Agenda)
1.1	**Format of reporting**: Bureau noted that there is a lot of information presented in the Council meeting documents. There is a need to focus and summarise the documents by adding a "cover page" that summarizes the information and the key issues. The one page document should also highlight the decision required from Council or whether the document is for information only. The Secretariat will implement this approach for the 2016 Council meeting. This was brought to Council and Council decided *that strategic recommendations from Bureau and recommended actions for Council should be clearly outlined in a one-page supporting document. In future each Council document will have a one-page lead summarizing the key issues, and identifying what decisions are required by Council*.	Council documents have been developed in a way which clearly outlines the actions needed or important points at the beginning of the document.
Council 2.1	**ACOM Chair**: Bureau will establish a Recruitment Panel (RP) in November-December 2015 who will oversee the entire recruitment process for the new ACOM chair.	The Recruitment panel was established. Council will be asked to appoint the new ACOM Chair as per the recommendation of the panel under AI 6.2.
Council 2.2.1	**Science Leadership**: Council agreed that the work associated with CSWGSSL, the review of ICES Science and ICES science funding should be combined into one CSWGIS (Council SCICOM Working Group on ICES Science) to be chaired by Pierre Petitgas and Tammo Bult. The chairs will develop the ToRs for the Group and finalize the participants during November-December 2015.	Tammo Bult and Pierre Petitgas will report on the progress under AI 2.2.
Council 2.2.1	Bureau agreed to propose to Council to set-up a **Council Working Group on ICES Science Funding** to consider these issues, and also how ICES can bring in additional funding. The aim is to resolve the issue and make recommendations to Council in 2016.	Tammo Bult and Pierre Petitgas will report under AI 2.2. Council will be invited to discuss and approve the Bureau recommendations: - to support the SCICOM proposal to use 500,000 DKK (core funding/annually) for supporting the work of SSG Chairs, and to request SCICOM under the incoming SCICOM Chair to elaborate a work plan and framework administrative guidelines;

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		- to support the SCICOM proposal to use 50,000 DKK (core funding/annually) for a Science Working Group Chairs meeting; - to respond to the SCICOM request for funding of Strategic Initiatives, action areas, and cooperation with scientific partners with a total of 350,000 DKK (from equity) for three years, 2017, 2018, and 2019; - to discontinue the Science Fund; - to invest 1.3 million DKK, from equity, in an introductory training package for chairs of expert working groups, activities to strengthen and streamline data and information products for the ecosystem approach, and support to the production of Aquaculture overviews. This includes a reallocation of 300.000 DKK set-aside for demonstration advice by 2015 Council meeting.
Council 3.1	**MoU and Business model**: Council reconfirmed, in accordance with the RoP, Rule 24, the role of the Finance Committee and accordingly requested the Committee to include a longer time and more strategic perspective in their annual consideration of ICES budget. For the 2016 meeting the Finance Committee is specifically requested to consider if there is ground to increase the CRF to 30% (or what is the appropriate level of CRF for ICES) of income and to develop guidelines that will describe how and when these funds should be used. Finance Committee will take ownership and steward the ICES Business Model and relevant documentation. As part of their broader mandate, Finance Committee is requested to update the Business Model as needed, keeping specific focus on the income and expenditures as outlined in the Programming Budget Bureau will produce a discussion document on MoU income outlining the issues and reflecting on the products, the processes to deliver these products, their costs, the interaction between science and advice, and the relation to ISP, to maximize the benefits to ICES, for consideration at the 2016 Council meeting. **The Head of ACOM Support together with the ACOM Chair and the General Secretary will prepare a first draft for consideration at the 2016 February Bureau**	The Chair of Finance Committee, General Secretary, and ACOM Chair will be following up on these issues under agenda item 3.

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	Regarding the **2017 Budget** – it was decided not to propose the usual vote at Council. Instead the General Secretary will visit the member countries (who will potentially vote NO) in spring 2016 to discuss the national contributions and how ICES adds value to their national contributions and meets the needs of each member country. Following a tour of member countries, the Council voting on the 2017 Budget will take place by e-procedure before the June bureau.	The General Secretary met with Member Countries who expressed interest. The vote on the 2017 national contributions resulted in a 0% increase.
Council 3.1	**Projects acquisition**: Bureau will look into a more a proactive project participation role for ICES and the Secretariat in relation to Coordination and Support Actions (CSA projects) that are aligned with the ISP. The Secretariat will develop a discussion document for February Bureau.	The Head of Science Support will report on the Bureau discussions under Agenda item 3.3. Council will be requested to approve the recommendations regarding ICES proactively leading Coordination and Support action type projects.
Council 3.1	**Data handling**: Task the Coordination Group, the Head of Data and Information, the Chairs of SCICOM and ACOM, the Head of Advisory Support, the Head of the Science Programme, and the General Secretary, to prepare for a document on data handling for the February Bureau meeting, and to submit a full report to the June Bureau meeting, with the aim to have recommendations for discussion and approval at the 2016 Council meeting	To be dealt with by ACOM Chairs and Head of Data and Information in their reports.
Council 3.1 & 8.1	**New Clients**: The Coordination Group is also requested to prepare a discussion document for the February Bureau on how to attract (new) clients for new strategic areas, as opposed to new clients requiring different advice for the same questions/requests	The ACOM Chair will report on this under agenda item 3.2.
Council 3.2	**Sponsoring**: Council rejected the notion of a sponsorship deal with H2O. However the Secretariat should investigate the possibility of an ocean outreach/communications/awareness campaign between ICES and H20 where any additional costs would be met by H2O. This will be discussed by the February Bureau	Following the Council decision, no further cooperation has been initiated.
Council 4.1	**Demonstration Advice**: The Coordination Group (CG) is tasked to elaborate a discussion paper on how the IEA groups could test their approaches by responding to a specific "pilot advisory request" (i.e. demonstration advice). This pilot advisory request could potentially be supported through a demonstration project. Bureau will	The "Demonstration advice" process was discontinued at the June Bureau meeting.

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	consider potential demonstration projects and the required funding at the February Bureau meeting, noting the funding set aside from equity for strategic initiatives	
Council 4.1	**Mid-term review**: Council mandated Bureau to conduct a mid-term review on the implementation of the ISP and report to Council in 2016	A midway review document has been developed by the Coordination Group. Council will be invited to discuss under Agenda item 2.1.
Council 5	**Transatlantic Cooperation**: CWGMTC will become a Strategic Initiative at Council level (CSIMTC). Funding and the EU (not EU dimension) will be part of the ToRs. The draft ToRs will be revised by the Co-Chairs and Bureau. Council will be informed of the new ToRs.	Co-Chairs Fritz Köster and Alain Vezina will report under agenda item 5.
Council 7.1.2	**Aquaculture**: SCICOM is requested to establish contact with WGAQUA/WGSEDA to ensure their input and contribution to future work around these priority areas. A Bureau sub-group (BSGADM), consisting of Tammo Bult, Johann Sigurjónsson, and Anne Christine Brusendorff will do an initial investigation with participants of the ADM on what they got from the ADM and how future meetings could be improved.	The Bureau sub-group gathered feedback. An update on the development of the aquaculture priority area will be presented under agenda item 7.1.2.
Council 7.1.3	**Arctic**: Council took note of the overview of issues and progress presented in the Arctic roadmap **CM_2015_Del-7.1.3**. If possible (if invited) ICES will participate in the Arctic Taskforce meeting Feb 4-5 2016 in Stockholm, Sweden and will use the opportunity to showcase ICES competence in the Arctic. In order to showcase ICES on-going and potential competence The President, General Secretary, President, Chair of ACOM, and Chair SCICOM will develop content for the February meeting. ICES will also consider participation in the Arctic Circles conference in Iceland October 20, 2016. The June Bureau will consider the potential for a workshop on the arctic, noting the standing offer of Norway to host the workshop.	An update on the development of the Arctic priority area will be presented under agenda item 7.1.3.
Council 7.2	**CoI**: In order to create a clear Conflict of Interest policy for ICES, a Bureau Sub Group (BSGCOI) consisting of the President, 1st Vice-President, General Secretary, ACOM Chair, SCICOM Chair,	Council will be invited to approve the Conflict of Interest policy under agenda item 11.1.

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	and Head of Data and Information will consider how to define and deal with conflict of interest in ICES following the ToR above.	
Council 7.3	**Science review**: As the science review issue is interlinked to many of the changes on-going in the science pillar, including the proposed mid-term review of the ISP, it was agreed that this would be one (of three) components of the overall group (CSWGIS) that will be Co-Chaired by Pierre Petitgas, and Tammo Bult. The aim is to ensure coordination between these initiatives	Tammo Bult and Pierre Petitgas will report under agenda item 2.2.
Council 8.1	**ICES-EFARO**: Consider a joint ICES–EFARO meeting soon to address the issue of member states and the resources available, with a specific focus on special requests	ACOM Chair will report under agenda item 8.1.
Council 8.1.3	**RCT and CARA:** The continuing "workload" issue will be flagged as an issue noting progress on the Resource Coordination Tool (RCT) as a tool to help understand the problem better. The RCT will quantify the workload issue, but solutions need to also be identified, perhaps by limiting the amount of work accepted. The solutions proposed must also be linked to the proposed equity investments listed in the IBM. Such as: hiring additional Secretariat staff to run the update assessments. Delegates are requested to provide feedback on what kind of reports and information would be useful for their work-planning. The General Secretary will send a letter to delegates, requesting this information. Delegate engagement is vital to ensure the work tool is developed in a way that is useful for them. CARA will continue to develop and feedback will also be needed during 2016	The ACOM Chair will report on the Transparent Assessment Framework under agenda item 8.1.3. The General Secretary will report under agenda item 10.1.1

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International Council for the Exploration of the Sea

Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

Agenda item 2.1

CM 2016 Del-2.1

ICES Strategic Plan 2014-2018

Midway report and Vision document

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ICES Strategic Plan 2014 –2018 Midway Report and Vision Document

The current ICES Strategic Plan (ISP) runs until 2018. 2016 presents an opportunity to take stock and consider progress and gaps in reaching the goals laid out in the plan. This report has been developed by the Coordination Group, reviewed by Bureau, and now submitted to Council. This report will help to inform a discussion on the renewal of ICES Strategic Plan.

The Midway Report and Vision Document discusses progress in developing integrated ecosystem assessments, the key challenge of the ISP, and provides examples from each of the four pillars. The "gut-feeling" reports provided in Section 6 give a detailed review of progress for each of the pillars.

The focus of the Midway Report and Vision Document is, however, on the challenges for the remaining part of the current strategic plan. The report discusses the priorities for 2016 – 2018.

Given the timeline of Council meetings, this review also highlights the need for a well-planned renewal process for the next strategic planning cycle.

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1 Challenges

With the adoption of the ICES Strategic Plan, 2014-2018 ICES decided to build its foundation of science around one key challenge; integrated ecosystem assessments, in order to ensure science, data and advisory products to support the objectives and goals of marine policies and legal instruments. Notably, more integrated policies, such as the application of the ecosystem approach.

This includes work to support the evolution and eventual shift from single sectoral issues towards more integrated foci. An integration that focuses on linkages across sectors, and on identifying and evaluating cumulative pressures from various human activities on marine ecosystems. Two more specific choices were also made, to give priority to aquaculture and the Arctic.

With resources already being stretched within the ICES community, and the secretariat, a major challenge is to coordinate, rationalise and prioritise the use of the available resources. Part of which will take place through cooperation with partners. It also involves a better integration, and coordination within ICES across areas of science, data, and advice.

2 Implementation

The ICES Strategic Plan 2014-2018 is built around the four pillars of the organization: Science, Advice, Data & Information, and the Secretariat. Strong pillars are the foundation of our work, and the implementation of the ISP has been centred around pillar specific plans. Examples from the implementation of the Implementation Plans are provided below, and a gut feeling status of the implementation for each pillar is given in section 6.

Cooperation and integration between the pillars has proven to be vital to the success of the strategic plan. Specific actions and investments have facilitated the integration of ICES pillars.

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2.1 Leadership

2.1.1 The Coordination Group

A Coordination Group has been established to coordinate work at an operational level across science, data, advice and the secretariat. The Group is chaired by the General Secretary, and with the participation of the ACOM and SCICOM Chairs, the Heads of Science and Advisory Support, the Head of Data and Information, the Ecosystem Approach Coordinator, and the Coordinating Secretary. The Coordination Group reports to Bureau. The establishment of the Coordination Group has had a very positive effect on the cooperation and coordination between pillars.

2.1.2 Restructuring of the Advisory leadership (ACOM and the Secretariat)

The change from a 50% ACOM chair to a 100 % honorarium financed ACOM chair, located in the Secretariat, but independent and reporting to ACOM/Council has proven effective in centralizing strategic work by the chair and the ACOM leadership. The Head of Advisory Support is now focused on providing support to the ACOM chair and handling the resource and financial issues related to the advisory processes. The clearer division of roles and tasks, has led to more prioritised and focussed work, easing the cooperation with the other pillars. With the Chair located in-house the opportunity for daily meetings, informal contacts, and resolution of cross-pillar issues, that would otherwise had required longer time and more resources.

2.2 Examples of progress from each pillar

2.2.1 Secretariat

- **C**ontent **A**dministration for **R**eports and **A**dvice (**CARA**), making available data /information services and products, as well as ensuring accessibility, and reproducibility of ICES products. Work will continue to develop and fine-tune CARA.
- **R**esource **C**oordination **T**ool (**RCT**), facilitating both a focused and transparent use of national institutes resources, and creating a unified work and resource planning system. Work will continue to develop and fine-tune RCT.
- Outreach activities, ranging from press releases, bi-monthly newsletter, coverage of symposia, annual report, early career scientist activities, and other popularization of ICES products, mainly through the webpage, and social media, and to a lesser extent via printed material.

2.2.2 Science

- Production of integrated ecosystem assessment in regional seas, covering eight (8) ecoregions (the Baltic Sea, the North Sea, the Western European Shelf Sea, the North-west Atlantic Regional Sea, the Mediterranean Sea, the Barents Sea, the Norwegian Sea, and the Central Artic Ocean).

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- Cooperation with partners, including the North Pacific Marine Science Organization (PICES) and the Arctic Monitoring and Assessment Programme (AMAP, one out of six Working Groups under the Arctic Council), arranging joint workshops/symposia.
- Further development and improvement of the Annual Science Conference (ASC).

2.2.3 Advice

- Streamlining of the advisory products, with clear deliverables on fishing opportunities, fisheries overviews, and ecosystem overviews.
- Launch of four (4) ecosystem overviews beginning 2016 (the Barents Sea, the Celtic Sea, the North Sea, the Bay of Biscay and Iberian Sea), the remaining ecosystem overviews in the pipeline, and the production of fisheries overviews for launch end 2016.
- Futher development of the framework for advice of stocks with knowledge / data limitation (category 3-6 stocks).

2.2.4 Data and Information

- New databases and portals (e.g., **V**ulnerable **M**arine **E**cosystems (**VME**) data portal, Biodiversity database, Impulsive Noise Events Registry, Acoustic Database, Marine Litter data).
- Operational oceanographic products (OOPS), Regional indicator products (Impulsive underwater noise – pulse block days)
- Assessment automation (e.g., eutrophication and hazardous substances assessment tools).
- A structured and coordinated process across the ICES pillars to official calls for data needed for ICES advisory and science work.

3 Outstanding issues

Based on the gut-feeling reports in Chapter 6 the following issues have been identified as lacking implementation.

3.1 Secretariat

- Training; reaching out and engaging with academia, and testing on-line accessibility

3.2 Science

- Ensure availability of experts in ICES Science community including aquaculture, bluewater and other oceanographers – identify and fill gaps

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- Continue to build an operative platform for social sciences in support of IEA.

- Develop online training facilities.

- In cooperation with data and advice, advance the data flow from producer to end user.

3.3 Advice

-Capacity for provision of advice for emerging human activities in the Arctic.

-Consider the social and economic analysis needs of users of advice in an ICES Dialogue meeting.

-Prepare methodologies and examples of impact assessments of management measures that accounts for environmental viability and social and economic trade offs.

3.4 Data and Information

- Aquaculture data needs and operational systems.

- Speedier progress on data support to Arctic activities via ICES EGs and partner organizations.

- Quality control and documentation of control processes needs more integrative work and focus.

- Data availability; increase efforts to ensure a better connectivity between the national data assets and the versions provided to ICES for advice and science.

4 Priorities 2016-2018

On the basis of the above summaries on the status of implementation of the ICES Strategic Plan, and the Implemetnation Plans of the four pillars, the below priorities are suggested.

4.1 Implementation of new Science Leadership (SCICOM and the Secretariat)

End 2016/beginning 2017, respectively, a Head of Science Support, and 100% honorarium paid (earlier 42%) SCICOM Chair will take up their positions, both located in the Secretariat. In addition, the SCICOM leadership has been strengthened with an annual allocation from the core budget of DKK 550.000,-, with a request for a work plan, and administrative rules to be developed for the use of the money.

Further work:

The aims of the new science leadership are equal to the new advice leadership; to focus strategic considerations, including cooperation with new/existing partners, align priorities with other parts of the organization, and ensure cooperation among SCICOM leadership, and with Secretariat.

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4.2 Integrated science and advice for the implementation of the ecosystem approach, based on data and knowledge products

The work towards more integrated science and advice encompasses; freeing up resources by facilitating and, where possible, automating resource heavy working procedures, investigating the use of existing and new datastreams in support of integrated science and advice for implementing the ecosystem approach, and initiating a dialogue with existing/new stakeholders to identify knowledge/products needed.

4.2.1 Integrated products, and dialogue with clients and stakeholders

Further work:

Data needs in support of an ecosystem approach to fisheries and environmental management

- Data Collection; streamlining the data collection, capitalizing on ICES position as end-user, ensuring both the use of collected data across ecosystem components and the identification of data gaps considering the data needs to support an ecosystem approach to fisheries management. Investigating the possibility of integration of ecosystem related monitoring activities in survey plans.
- Data Collection; investigating how the ICES coordinated trawl, acoustic and plankton survey data can contribute to the developing ocean observing network/capacity.
- Data processing, further development and use of the Regional Database and DATRAS, with pilot tests in 2016, and wider use for the assessment work and data quality evaluation in 2017. The development of these products will have a key role both for Member States to improve their sampling programmes at a regional level and ICES, to assess the quality of the input data used for advice and science.

ICES as provider of data, science and advisory products for the ecosystem approach

- Identify, in dialogue with clients and stakeholders (meetings with clients, stakeholders, observers, and dialogue meetings; 2018 Dialogue meeting on ICES and EBM), ICES role as provider of science, data, and advisory products in support of the ecosystem approach to management.
- Develop demonstration advice.
- Identify existing and needed new datastreams, and knowledge products, and demonstrate ICES ability to contribute to these (e.g., Arctic, aquaculture, maritime spatial planning, and integrated management of maritime activities).

4.2.2 More cost-efficient use of resources

Further work:

Automated overviews of recurrent ICES products

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- Ensure processes and tools are in place to annually provide automated updates of the ecosystem and fisheries overviews.
- Investigate and develop additional automated overviews, ensuring that ICES provides both underlying data, and maps, as well as scientific analyses (e.g., for aquaculture, maritime spatial planning, and integrated management of maritime activities).
- Continue work to establish a Transparent Assessment Framework (TAF) to allow appropriate documentation, future replication and re-run of ICES assessments, by building up a system with tools to conduct the update and peer reviewed fish stock assessment and archive data, methods, and results used in an ICES assessment. Ensure that TAF will link up to relevant databases hosted by ICES, such as the Regional Database (RDB), the survey database (DATRAS), the acoustic database, and ICES output products, such as the Stock Assessment Graph.
- Based on ICES knowledge base for Ecosystem Based Fisheries Management (EBFM) and Ecosystem Based Management (EBM), establish a formalised approach to ICES Ecosystem Based Advice, equivalent to the ICES MSY approach, being used for ICES Fisheries Based Advice.
- Following on from the above, investigate the expansion of TAF to support Ecosystem Based Advice, and Integrated Advice.

<u>A new benchmark system/process embedded in the Expert Groups</u>
- Developing a new benchmark system, that actively involves all relevant Expert Groups, includes transparent processes to identify benchmarks involving stakeholders, and ensures that the resources required are allocated before a benchmark is initiated.

4.3 Aquaculture and the Arctic

Specifically for the Arctic and aquaculture there is a need for ICES to cooperate with partners, and in the light of work already carried out by ICES, identify added-value work for ICES/and in cooperation with others.

Further work:

<u>Arctic</u>

- Investigate the establishment of a data needs-planning group; surveys/data collection and data processing.

- Investigate the expansion of data services with special emphasis on the Arctic Ocean.

- Demonstation Advice; in cooperation with partners investigate pertinent issues of interest for clients and stakeholders.

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Aquaculture

- Identify data needs for a science based information on aquaculture impact on the ecosystem.

- to further develop (with partners) the necessary data steam infrastructure to facilitate the science analyses and aquaculture overviews.

- Investigate and develop automated aquacultures overviews, ensuring that ICES provides both underlying data, and maps, as well as scientific analyses without duplication of aquaculture information developed by other organization such as FAO and EU.

4.4 Training

The operational training group, has been instrumental to the success of the Training Programme, however, given the annual meeting schedule, experience of course cancellations, and difficulties in developing on-line courses, more dedicated support for the Training Programme may be helpful to ensure efficient working procedures and continued success for ICES in this training role.

Further work:
- Develop new courses related with emerging science, and advice topics.
- Develop new courses related with ICES data products and services.
- Support expert group chairs with information and guidance through updated communication tools, and annual meetings of Chairs, both for science and advice.
- Evaluate and develop a strategy for the ICES Training Programme, including assessment of training needs, on-line training courses, considerations of alternative training initiatives (courses arranged by Ph.D/Post.doc), and exploring options for accreditation of the ICES Training Programme.

4.5 Work across departments in the Secretariat

Following changes to the leadership structures, and the reassignment of tasks and responsibilities, further changes to the established working procedures will be explored in order to make best use of Secretariat resources and further support integration and coordination of ICES work.

Further work needed:

Using the Line Managers Meeting & Coordination Group

- Organize work in the Secretariat thematically ensuring contribution and coordination of input by science, data, and advice (themes such as surveys/integrated surveys, aquaculture/aquaculture overviews, arctic, ecosystem products, data needs and collection for ecosystem based management). This will be dealt with also in the light of the need for a balanced budget.

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- Consider how existing and developing tools (i.e. The Resource Coordination Tool (RCT) and SharePoint) can be used to support the organizational theme based proposal;
- Develop annual joint working programme, to be reviewed throughout the year, to ensure an high degree of cooperation between, and adaptiveness of all pillars.
- Proactively consider participation of ICES in projects, including Coordination and Support Action (CSA) projects, and establishment of partnerships/activities, as a means to implement the ICES Strategic Plan across the organization.
- Ensure continued communication and outreach about ICES activities and products/deliverables.

5 ICES Strategic Plan, 2019-2023, and onwards

Based on the experience of annual joint working programmes, it could be considered to develop a Joint Implementation Plan as a five-year plan. The first plan to be adopted in 2018 would cover the period 2019 to 2023. This plan will be reviewed and updated in 2019 to cover 2020 – 2024 etc.

The Joint Implementation Plan should be the basis for reports to Bureau, and an annual evaluation should be prepared for the Council meetings, as the foundations for discussions and reviews. This would ensure a more "living" implementation plan, with Council ownership, and which could tie together the work of the various pillars in the organization.

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6 Updated "gut-feeling" reports

6.1 Science

The section includes expert evaluations of the SCICOM Steering Group Chairs:

- Graham Pierce, SSG Ecosystem Processes and Dynamics (SSGEPD)
- Henn Ojaveer, SSG Ecosystem Pressures and Impacts (SSGEPI)
- Dave Reid, SSG Integrated Assessments of Ecosystems (SSGIEA) – not available but will be filled in shortly
- Nils Olav Handegaard, SSG Integrated Monitoring and Observation (SSGIEOM)

Summary

The gut feeling exercise was introduced in 2014 to give a brief overview of the status of the implementation of the Science Priorities under the Science Implementation Plan that support ICES Strategic Plan (2014-2018)

The revisited evaluation 2016 is to show the midways status of implementation.

The scale of scoring the implementation was established as follows.

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

The results of the evaluation is shown in the table below. The expert evaluation of 24 priority areas (the 7 priority areas of SSGIEA are not evaluated yet) shows increased scores in 12 areas (marked in green in the table below). Priorities areas scoring some progress to doing well (3-5) are 18 (24) and 10 (24) areas are scoring 4-5.

The evaluation is considered to be conservative and the progress is in fact more extensive. This is due to that the priority areas are assigned to a specific SSG. A more extensive mapping of the implementation started in 2015 by initiative of SCICOM is to be updated and in this evaluation the crosscutting effects which will be clearer and give a fuller picture of the implementation of the Priority Areas.

SSGEPD	Priority area	2014	2016	Comments

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Describe and quantify the state of North Atlantic Ocean regional systems	1. Assess the physical, chemical and biological state of regional seas and investigate the predominant climatic, hydrological and biological features and processes that characterise regional ecosystems	3	4	In general I think we are making good progress, especially through groups like WGBIODIV and BEWG. Topics like climate change and indicators are well covered.
	2. Quantify the nature and degree of connectivity and separation between regional ecosystems	1	1	Arguably some relevant information is collected but I don't see anyone focusing on it
Understand and forecast the impact of climate variability and change on marine ecosystems	3. Quantify the different effects of climate change on regional ecosystems and develop species and habitat vulnerability assessments for key species	3	4	
	4. Understand the influence of climate impacts across a range of temporal and spatial scales, from local to global and from seasonal to multidecadal and identify indicators of climate driven biotic responses and forecast trajectories of change	3	4	
Resolve and quantify ecological processes in marine ecosystems, including modelling the dynamics of food webs and their responses to environmental change	5. Quantify the role of structural and functional diversity in marine ecosystems in providing stability and resilience	1	3	For some of the more basic knowledge on structure and function coverage is more patchy but arguably significant. This is also true of work on ecosystem services although only one group focuses on ES
	6. Investigate linear and nonlinear ecological responses to change, the impacts of these changes on ecosystem structure and function and their role in causing recruitment and stock variability, depletion and recovery.	3	3	
	7. Develop end to end modelling capability to fully integrate natural and	1	2	I am not sure anyone is doing true end-to-end models but many components are modelled

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	anthropogenic forcing factors affecting ecosystem functioning			
Quantify the relationship between habitat condition, ecological processes and the provision of ecosystem goods and services	8. Define and quantify north Atlantic Ecosystem Goods and Services, model their dependence on ecosystem processes and habitat condition and their social, economic and cultural value.	1	2	
	9. Identify indicators of ecosystem state and function for use in the assessment and management of ecosystem goods and services	2	3	

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SSGEPI	Priority area	2014	2016	Comments
Estimate long term trends of human	10. Develop historic baseline of population and community structure and production to be used as a basis for population and system level reference points.	2	3	WGHIST has identified useful datasets. Support for storage in ICES data center is needed. Next step is baseline development. The next 3 yr of this group should be related specifically to this TOR and perhaps be named something like WG Historical baselines
Understand, quantify and mitigate	11. Develop methods to quantify multiple direct and indirect impacts from fisheries as well as from mineral extraction, energy generation, aquaculture and other anthropogenic activities and estimate the vulnerability of ecosystems to such impacts.	3	3	Strong development of modelling of impacts from fisheries. Contaminant impacts has started to developed threshholds and is progressing steady and well.
	12. Develop approaches to mitigate impacts from these activities, particularly reduction of non target mortalities and enhancement/restoration of habitat and assess the effects of these mitigations on marine populations	2	2	Development is made in ICES but not particularly in EPI groups. Work has been done in relation to discards. WGSAM investigates impacts of bycatch on other target species through F. WGVHES has worked on the role of coastal habitats on exploited populations. We may get something related to essential fish habitat from that group. Score would be higher if other activities were evaluated. Remove priority from SSGEPI?
	13. Develop indicators of pressure on populations and ecosystems from human activities such as eutrophication, contaminants and litter release, introduction of alien species and generation of underwater noise.	3	4	With the recent movement of ITMO and BOSV into EPI this work will progress faster in the steering group. Aquaculture groups are progressing in terms of that particular type of eutrophication
Provide evidence in support of sustainable management of ecosystem goods and services	14. Evaluate ecological, economic and social trade-offs between ecosystem protection and sustainable use to advise on management of human activity in marine ecosystems	1	1	SGSA which looks and social dimension of aquaculture but it is in developing. WGMARS moved to IEA. Reevaluate the SSG TORs
	15. Develop tactical and strategic models to support short and long term fisheries management and governance advice and increasingly incorporate spatial components in such models to allow for finer scale management of marine habitats and populations	5	5	Tactical fisheries models both single and multispecies are well covered. Good work associating coastal habitats with exploited population dynamics. Spatial aspects are well considered in SIMWG and some nations (e.g. Iceland) has strong spatial aspects to their stock assessment which can make appearances in WGSAM. Support for WGMG to make sure it continues to be important and it is key to this SSG TOR.

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	17. Develop science in support of advisory needs in marine aquaculture systems, minimizing environmental impacts and integrating other marine sectors.	3	4	Primarily in WGAQUA, potential expansion but WGAQUA is actually spinning off TORS and workshops related to these areas. I do not see a strong need to change in this area, it is coming along as long as we continue to support the group.

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SSGIEA	Priority area	2014	2016	Comments
Develop a scoping process to identify objectives to guide IEA's in ICES regional Seas	18. Identify objectives for IEA's that address ecosystem stability and health, taking cognizance of ecological, social and economic sustainability goals as well as multi scale issues.	4		
	19. Identify issue based ecosystem questions relevant to science and management needs that can be addressed by developing IEA's	2		
	20. Provide priorities and specifications for data collection frameworks supporting IEA's.	3		
Advance IEA methodologies and approaches in the ICES context	21. Conduct pilot studies in data rich areas for alternative IEA approaches, linking quantitative and qualitative methods at appropriate spatial and temporal scales.	1		
Develop approaches that allow forecasting within an IEA and evaluation of the effectiveness of tradeoffs of different management options	22. Determine and demonstrate what modelling and analytical approaches will allow projections of ecosystem states in IEA's	3		
	23. Use IEA's to informing management about the effects of cumulative pressure and additive and non additive impacts, and which provide risk evaluations and analyses of tradeoffs between sectoral objectives.	1		
	24. Compare IEA and single issue approaches regarding their efficacy in providing management and governance advice on sectoral and multi sectoral use of the oceans.	2		

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SSGIEOM	Priority area	2014	2016	Comments
Identify and prioritize ICES monitoring and data collection needs	25. Identify monitoring requirements for science and advisory needsin collaboration with data product users, including a description of variable and data products, spatial and temporal resolution needs, and the desired quality of data and estimates	3	3	
	26. Develop a cost benefit framework to evaluate and optimize monitoring strategies in the context of the capabilities of, and reqests from ICES Member Countries and clients.	2	4	
Develop further the methodology for the observation and monitoring of marine ecosystems in the ICES area.	27. Identify knowledge and methodological monitoring gaps and develop strategies to fill these gaps	2	2	
	28. Promote new technologies and opportunities for observation and monitoring and assess their capabilities in the ICES context	4	4	
	29. Promote the development and testing of new fishing gear technology and methods for selective reduction of by-catch and discards and for mitigation of other environmental impacts of fishing	4	4	
Implement integrated monitoring in the ICES area	30. Allocate and coordinate observation and monitoring requests to appropriate expert groups on fishery dependent surveys and sampling and monitor the quality and delivery of data products.	3	4	
	31. Ensure the development of best practice through establishment of guidelines and quality standards for (a) surveys and other sampling and data collection systems; (b) external peer reviews of data collection programmes and © training and capacity building opportunities for monitoring activities	3	3	

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6.2 Advice

OVERVIEW

2014					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**
1				**3**	
2		**2**	**1**	**2**	
3		**1**	**1**	**7**	**2**
4	**1**	**2**	**2**	**2**	**2**
5					
	N = 1 Action	**N = 5 Actions**	**N = 4 Actions**	***N = 14 Actions***	***N = 4 Actions***

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

2015					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**
1				**2**	
2		**1**	**1**	**3**	
3		**4**	**1**	**5**	**1**
4			**2**	**2**	**3**
5	**1**			**2**	
	N = 1 Action	**N = 5 Actions**	**N = 4 Actions**	***N = 14 Actions***	***N = 4 Actions***

2016					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**

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1				2	
2			1	3	
3		3	1	3	2
4		2	2	3	1
5	1			3	1
	N = 1 Action	N = 5 Actions	N = 4 Actions	*N = 14 Actions*	*N = 4 Actions*

MoU

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ACOM	ACOM Category	ACOM - Action	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	1. Deliver relevant, timely and credible advice	Implement MOU's with advice recipient	4	5	5

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Quality

ACOM	ACOM Category	ACOM - Actions	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	2. Foster efficient use of resources and quality assurance	Implement RCT and priotitiuse resource use	4	3	3
		Further excplore and implement, where appropriate multiannual evaluations of management measures (the state of the stock) for the provision of annual advice	2	3	3
		Enhance substantive support by ICES Scretaariat to the advisory process	4	3	4
		Implement the CARA system ; Automate the process of transferring assessment results from the assessment software to the advisory sheets, including standard graphs	2	2	3
		Conduct internal audits of data. Input and assessment results for all advice providing expert groups	3	3	4

Data

ACOM	ACOM Category	ACOM - Actions	Gut Feeling		
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	3. Improve data collection and use	Coordinate and integrate surveys	2	2	2
		Develop guidelines for best practice in design and aimplementation od statistically sound catch sampling schemes	4	4	4
		Identify the data required to provide advice on fisheries and environmental issues and communicate the requirements to those responsible for the collection of data	4	3	3
		Promote efficient and effective data storage through integration of data in regional databases, including making data available for experts through intercatch	3	4	4

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Scope

ACOM	ACOM Category	ACOM - Actions	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	4. Develop scope of advice	Provide advice in relation to the changing policy environment . Facilitate transition of a new regime, new data, ecosysterm impacts and fisheries opportunities.	3	4	4
		Further develop/implement methodologies, which entails establishment of indicators and targets for all stocks, including data limited stocks (DLS)	4	5	5
		Provide advice taking into account technical interactions in each mixed fishery, as well as biological interactions between stocks, such as predation and competition in each ecoregion, per an established schedule, including a link with social and economic aspects when possible.	3	3	4
		Further develop capacity for provision of advice for emerging human activities in the Arctic - taking into account ecosystem considerations; monitor stock distributions into the Arctic region; data requirements and monitoring needs in the Arctic	1	3	3
		Advisory needs for aquaculture and its environmental aspects	3	5	5
		Integrate considerations fo by catch in the advice for fisheries (including elasmobranchs, mammals and seabirds)	3	3	4
		Integrate considerations of impacts of sensitive habitats in the advice fort fisheries	3	3	3
		Prepare methodologies and examples of impact assessments of management measures that account for environmental variability and social and economic trade offs	2	2	2
		Include discussion on social and economic analysis needs of users of advice in an ICES Dialogue meeting	1	1	1
		Facilitate transition from single stock benchmarks to regional benchmarks	2	2	2
		Further develop ecosystem overviews on a regional scale	4	4	5
		Provide advice on Marine Spatial Planning	1	1	1
		Develop mechanisms for promoting IEU as a basis for ICES advice	3	3	3
		In cooperation with Member Countries and regional seas organisations, develop IEA for the Baltic, North Sea and Barent Sea for use in advice provide exampoles of how IEA can be used in advice	3	2	2

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Communication

ACOM	ACOM Category	ACOM - Actions	Gut Feeling	Gut Feeling	Gut Feeling
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	5. Develop process and communication	Further develop the capacity of the ICES community and the stakeholders/policy developers to facilitate their interaction and dialogue as well as involvement in the advisory process	3	4	4
		Communicate advisory products to the public	4	4	3
		Communicate the advice through meetings with competent authorities and stakeholders	4	4	5
		Suport existing expert Groups chairs and potential future chairs to ensure they have the necessary skills (e.g. Training etc.)	3	3	3

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6.3 Data

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

OVERVIEW - % of Actions in each Score Category

Score	Score label	Regional products (8)	Interoperability (2)	Knowledge and Training (3)	*Data stewardship and Management (6)*
1	Not Started	11%			
2	Just Started	11%		33%	
3	Some Progress	11%	50%		
4	Good Progress	44%	50%	33%	40%
5	Doing Well	22%		33%	60%

SCORE	
1	Not Started

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and services to an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Regional Facilitation

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Regional Facilitation	Regional operational products for MSFD and the DCF	MSFD workflow: Collaboration between ICES Data Center and Regional Sea Conventions / other organisations with respect to MSFD (WISE-Marine Production Process). This assumes a good flow of data data harvesting into the data center and this and this can imply more resources in certain data types where data are not readily provided.	1	5	
		Leading to a joint MSFD data flow vision paper. Also depends on WISE-Marine. Secretariat Plan	1	4	
		New processes/products from existing data within Advisory and Science Groups with respect to MSFD: calculations for indicators. Needed: data selections, algorithms, calculation examples. Challenge: Who is going to decide on the final calculations and selections?. Workshop on MSFD related DC-MAP indicators Refer to table (MSFD table of ICES data/EG's and their operational product linkage).	1	4	
		Data requirements with regard to multispecies assessments (input for assessments). Currently ispecies assessments are applied ine.g. the Baltic but insufficient spatial data products are available. Bal;tic, other areas (Action Plan to be created). Needed: clear data request (unless no data are available)	1	4	
		Data requirements for e.g. one species from all fish surveys (WGEF, WGNEW); search f	1	5	
	End to End Workflow for Scientific Advice Production	CARA linking to data outputs from Expert Groups (connecting the scientific reports to the advice production)	1	4	
		CARA linking to data outputs from RDB - Fish Frame.	1	2	
	Mobilizing Aquaculture Specfic Data	Aquaculture Database: exact description to be decided. Related to WGAQUA.	1	1	
	Mobilizing Arctic Specific Data	In co-operation with AMAP, getting data from small Arctic research institutes. Implementing data formatting tool.	1	3	

1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well
	%
1	11%
2	11%
3	11%
4	44%
5	22%
N = 8 Detailed Actions	

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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International standards and interoperability

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

The Data and Information Services Picture

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
International Standards and Interoperability	Ensuring INSPIRE readiness for ICES managed datasets / data services	Describe and make available all ICES / ICES Expert Group managed datasets, data products or services through ISO/INSPIRE standards to allow their discovery and reuse by other expert groups, processes and member country activities.	**1, 3**	4	
	Encouraging the broader use of ICES datasets by implemen-ting IODE quality flaggig schema	Building on the quality control database that is in the process of being populated and then exposing to online users in a digestible way to make the linkage between type of data type(s) of QC performed and the QC flags applied to the data.	**1, 3**	3	

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

	%
1	0%
2	0%
3	50%
4	50%
5	0%

N = 2 Detailed Actions

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Knowledge transfer and professional development

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

The Data and Information Services Picture

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Knowledge Transfer and Professional Development	Input to Key Data Symposia and Science Meetings	Data theme sessions (ASC, IMDIS, etc.); Annual theme sessions proposal ASC by DIG	3	4	
	Training and Reference Guides for Scientists and Data Managers	ICES training courses: " Making the most of ICES Data " modular, Webinars ?	3	2	
		Online materials and guidance: WKIDG in 2014	3	5	

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

	%
1	0%
2	33%
3	0%
4	33%
5	33%

N = 3 Detailed Actions

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Data stewardship and data management

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Data Stewardship and Data Management	Data mining and data recovery; identifying and making available data ses that are relevant to the marine community	Benthic historical data recovery. Plan ready. No time frame. Connected to BEWG, DGMARE (DC-MAP) related, perhaps EMODnet biology?	3	5	
		Legacy data: data that are in other systems, but not available to the wider world. Linking to other data archives i.e. through metadata	3	4	
		Other historical data	3	N/A	
	Ensduring ICES data are citable in the digital age and therefore making the datasets easier to discover	Digital data citation and publication: ensuring ICES data are citable in the digital age and ensuring contributing data sources are duly credited, as well as guiding the ICES Member Countries on how to approach digital citation.	3	4	
	Maintaining the user rights, security and integrity of the data sources to ICES managed datasets	Data Policy - facilitation of rights issues	3	5	
		Data security and implications if data portfoliochanges in nature (i.e. VMS, VME etc).	3	5	

1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well
	%
1	0%
2	0%
3	0%
4	40%
5	60%
N = 6 Detailed Actions	

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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6.4 Secretariat

Overview

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

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

OVERVIEW - % in each Score Category

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

2014

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		1
2		1
3	2	2
4	2	4
5		1
	N = 4 Actions	N = 9 Actions

2015

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		
2		2
3	2	1
4	2	5
5		1
	N = 4 Actions	N = 9 Actions

2016

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		
2		2
3		1
4	3	4
5	1	2
	N = 4 Actions	N = 9 Actions

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Goal 6

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

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

Secretariat	Secretariat Plan - Action	Gut Feeling 2014	Gut Feeling 2015	Gut Feeling 2016	Performance Indicators
Foster the science , the advisory and the data information services through the work of the Secretariat (Goal 6)	Strategic support to the Council, Bureau, and the committees by provision of inputs regarding foresight of needs and options for development of science, scientific advice, and data.	4	4	5	Provision of timely & relevant inputs re. emerging science and advice
	Interact with external networks and communicate scientific priorities	3	4	4	Identification of new partners Reflected by new MoUs, LoAs, and strategic projects
	Increase the level of professional support across the ICES work plan to provide data compilation, and initial analysis for consideration to ensure best use of expert resources, inter alia, by strengthening the ecosystem profile in the Secretariat to support priority working areas identified in the ICES Strategic Plan.	4	4	4	Data & analysis made available to meetings Identification of an appropriate process where SEC support useful Meeting prep tasks re-assignment amongst SEC staff to ensure effcient use of resources
	Projects - interface with scientific groups and organisations and identify and facilitate participation in strategic work that supports the aims of the ICES Strategic Plan. Seek to link project work with participants from academia.	3	4	4	ICES represented in project consortia Ext. projects support work of ICES

SCORE	
1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well
	%
1	
2	
3	
4	
5	
	N = 4 Actions

Supporting Activity for Secretartiat to achieve Goals 6 and 7

1 . Securing the needed resources for the ICES Secretariat to support ICES science, advisory services, data processes and products and for publications and communications;

2. Implement effective tools and efficient process flow to streamine work processes and enhance the delivery of products;

3. Organising and supporting the resource planning and coordination of network activities;

4. Fostering cooperation and communications with Member Countries, partner organisations, stakeholders and society.

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Goal 7

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

The Secretariat Picture after 24 months - A look at Performance - A Qualitative Approach

Secretariat	Secretariat Plan - Action	Gut Feeling 2014	Gut Feeling 2015	Gut Feeling 2016	Performance Indicators
Ensure an efficient and effective organisation (Goal 7)	Facilitate effective and focused use of expert and infrastructure resources by making ongoing resource requirements transparent to national institute rersource managers using the Resource Co-ordination Tool (RCT)	4	4	4	Tool developed for use internally and externally
	Facilitate common access to ICES processes by developing work that draw on external resources readily available including the tasks, processes and meetings	3	4	4	Accessibility to common access tool that facilitates external access and stremlines procedures
	Develop and Improve the Training Programme and facilitate and test the online accessibility of the ICES Training Programme	1 or 2?	2	2	A training course accessible via online participation
	Develop and improve the Training Programme: reach out and engage with academia to widen target audience.	1 or 2?	2	2	More joint training courses available
	Publications - facilitate the electronic dissemination, availability and visibility of the products of ICES processes including technical reports, scientific publications and advice	5	5	5	Move towards electronic publications dissemination ICES docs with permanent digital traceable identities
	Further develop and implement the Content Administration for Reports and Advice (CARA)	3	3	3	Uptake of CARA in exp groups Full use in Adv process
	Maintain and develop high quality meeting facilities at ICES headquarters, embracing new technologies	4	4	4	One meeting room developed with best tech, with eventual spread to other rooms
	Create communications that focus on prioritised areas as defined by the Strategic Plan - promote the work of the ICES community and its relevance to society - make available various tools (ICES website, social media) for the community to communicate their work	4	4	5	Outreach material linked to ICES deliverables and outcomes (ICES video) Social media presence & increased community use/discussion
	Ensure that the Secretariat is able to respond to emerging science, advisory and data needs with relevant professional competence, reviewed by Secretariat management	4	4	4	Ready to respond to emerging needs

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

%
1
2
3
4
5

N = 9 Actions

Supporting Activity for Secretartiat to achieve Goals 6 and 7

1 . Securing the needed resources for the ICES Secretariat to support ICES science, advisory services, data processes and products and for publications and communications;
2. Implement effective tools and efficient process flow to streamine work processes and enhance the delivery of products;
3. Organising and supporting the resource planning and coordination of network activities;
4. Fostering cooperation and communications with Member Countries, partner organisations, stakeholders and society.

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Investment in action areas

Council is invited to approve the request for investment in action areas as discussed and agreed by the Finance Committee and Bureau, based on an evaluation by the Coordination Group of areas in need of further progress in the ICES Strategic Plan:

- Training; awaiting the arrangements for an online course on how to conduct a technical meeting, and following feed-back from a number of Expert Working Group Chairs, condensed, digested and more accessible material has been requested. This will be led by the Secretariat Communications department, and will require no additional finances.

- ICES coordinated survey data; - specific tasks have been identified to ensure a more complete availability of data and data products including biodiversity related issues (e.g., Large Fish Indicator) in the DATRAS data portal.

The DATRAS work will require a maximum amount of 660.000 DKK.

- Regional Database (RDB) for Commercial Catches; for ICES use in its strategy to provide quality assured and documented data in the stock assessment work. Further details are provided in document 9.2.

The RDB work will require a maximum amount of 1.000.000 DKK.

- Aquaculture; to provide the support needed to further the development of aquaculture as a priority area within ICES, as described in CM Doc 2012 del-7.1.2, including the support to concrete deliverables (e.g., Aquaculture Overviews).

The work of aquaculture will require approximately 640.000 DKK

Further details of activities within the area of training, DATRAS, and an initial outline of the Aquaculture Overviews are provided in the following sections.

1 Training – A start-up package to Chairs of ICES Expert Working Groups

No funds requested. Communications is now working on updating and revising the format in which all the necessary information is provided to expert group chairs in a more dynamic and easy to follow format.

Objective: There are a number of documents available for Chairs of Expert Working Groups, located in different places and with different accessibility[1]. The objective is to:

1 Cf. the Guidelines for Expert Groups, specifically sections 2.3.4-2.7.2, inclusive, the WGCHAIRS SharePoint page: https://community.ices.dk/ExpertGroups/WGCHAIRS/SitePages/HomePage.aspx, including specific links under that page: https://community.ices.dk/ExpertGroups/WGCHAIRS/Lists/Links/AllItems.aspx

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- Make an easy accessible and digestible introduction package for Expert Group Chairs to orientate themselves, prior to a meeting – with a focus on most pertinent issues, including a video/audio visual presentation.

Outline of issues to be covered:

Stress that Secretariat staff are available to facilitate the work of the Chair, and Expert Working Groups, and to communicate associated decisions by Council /Bureau of relevance to the work of the ICES community. A non-exhaustive list has been initiated below, which needs to be further elaborated with input from assisting secretaries, professionals, and chairs – to be able to cover the most pertinent issues.

- Conflict of Interest, and stressing the need to deal with the issue prior to and at the start of the meeting. Underlining the scientific character of the work carried out and that no one is supposed to represent a specific interest/organization. Emphasising the facilitating role of the Secretariat, in dealing with this.
- Decision-making in Expert Working Groups
- Recommendations from Expert Working Groups
- Communication at meetings and the use of social media
- Use and help offered by the on-line tools; **C**ontent and **A**dministration of **R**eports and **A**dvice, and **R**esource **C**oordination **T**ool, specifically the soon to come "MySite"
- Bundling together the practical issues; hotels, IT helpdesk, template, assistance in editing and formatting the final report, etc

Audio visual material:

- Create instructional videos on how to use ICES tools similar to: "How to search for ICES expert group reports in ICES library".

The opening page of the ICES Expert Working Groups on SharePoint contain practical information, and in addition each EG SharePoint page include specific links of relevance to the group.

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2 Data

2.1 Potential DATRAS tasks for outsourcing:

Involvement of the community is important, and a combination of dedicated staff in the secretariat, with involvement/secondment of staff from Member Countries will be sought.

Task	Comment	Effort estimated (person months)
Expert revision and automatization of NS-IBTS ALK (age length key) substitution procedure - revise current approaches in the ALK substitution, - research other approaches and possibilities - develop procedure for implementation of an automated ALK substitution	Secretariat expertise is not sufficient for this task; would be suited to a regional expert working with these data and in combination with database expert	1
Compute the estimations for maturity Ogives and provide the data and method on the DATRAS webpage generic approach	Recommendation from WKDATR2013/A23 IBTSWG and WGBIFS countries, WGNSSK, WGBFAS Request that needs an expert input	1-2
Need for ROCKALL data products and indices in DATRAS.	Scottish institute	1

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Task	Comment	Effort estimated (person months)
The data products should be the same as for SWC-IBTS, but calculated for the whole area. Additionally and as recommended, split SWC-IBTS into two surveys: SWC before 2011, and SWC from 2011, adjust data products accordingly	Case-study to help developing the procedure of creating data products for new surveys	
Sex and Maturity reporting quality – due to reoccurring issues with these fields, it could be good to: - analyse presently reported values; - communicate with submitters about practices and needs; - unify practices and develop the solution to implement in DATRAS or for submitters to adjust to.	This would result in an update to reporting guidance and help from the perspective of the data submitter to avoid future issues	1
Estimation of the mean weight at age based on BITS in quarter 1 and 4 All data for estimating the mean weight at age are available in DATRAS. The estimates of mean weight at age are required for the stock assessment.	*This is only possible if WGBIFS provides the description of the calculation procedure and examples; therefore a Baltic survey expert could provide this input* WKDATR2013/A24 and WGBIFS report 2013	1
LFI *Large Fish Indicator for biodiversity indicator in Ecosystem Overviews - data workup, building on the outputs (code and data cleaning methods) developed by the OSPAR lead on the LFI – implement	The documentation and coding is extensive and not yet finalized. The ICES implementation would try to be practical and aim at the checks and fixes that have the most	3

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Task	Comment	Effort estimated (person months)
these, as far as possible, in an automated way against DATRAS DB - Stage 2 would be to calculate the indicator based on the DATRAS data	significant impact on the data quality for the LFI. This may be achieved with additional internal resources as it is unlikely the OSPAR/HELCOM experts would be available to make a substantial time contribution other than providing documentation and skype call-ins	
Develop a repository for coding that could be used for all kinds of data quality analysis (effective sampling size ect.) i.e. GITHUB - which could be hosted by ICES (existing ices github production) - This depository could also include the ICES approved code for calculation etc. survey indices on DATRAS format. - This would facilitate an environment where scientist would develop and share software coding that could be beneficial in quality evaluation and optimisation, and avoid a parallel coding between DATRAS approved codes and the Scientists.	Recommendation (draft) From PGDATA 2016 Approach would be to use one of the above tasks to pilot this way of working, therefore might be only a small additional effort needed	<1
		Total 9-10 PM's

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Task	Comment	Effort estimated (person months)
		Professional officer, Cost = approximately 666,000 (DKK)

All the tasks should target a real operational solution as an output.

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3 Aquaculture Overviews

Background

The aquaculture industry is the fastest growing food production sector in the world and is an important component of world food security. A strong science and knowledge base is needed to inform management practices and guide the development of a sustainable aquaculture industry. To adequately address these challenges, ICES:

- Established a Working Group on Aquaculture and a Working Group on Social/Economic Dimensions in 2013,
- Identified aquaculture as a priority area in the ICES Strategic plan in 2014,
- Initiated an open aquaculture dialogue meeting with stakeholders in 2015 to discuss the future of sustainable aquaculture, and
- Agreed to develop aquaculture overviews similar to the fisheries overviews.

Next step:

- To provide the support needed to further the development of aquaculture as a priority area within ICES, as described in document XXX, including the support to concrete deliverables (e.g., Aquaculture Overviews).

Short term steps: to develop a proposal for the organisational set up of ICES aquaculture work via:

- Internal scoping process: to plan the way ahead for the ICES aquaculture work, a joint meeting of ACOM, SCICOM, and the Secretariat is planned for 21 November (led by the SSGEPI Chair/SCICOM Chair). The aim of the meeting is to develop ToR for this work, to be initiated in the beginning of 2017;
- an external scoping process, involving stakeholders and potential clients (including the EATIP, representing the aquaculture industry), expressing their wishes for ICES deliverables within aquaculture,

This ICES Secretariat will to the extent possible draw on existing resources in the Secretariat, and will bring in additional resources to facilitate the work. As possible, and to ensure the involvement of the community, this could be done through involvement/secondment from member Countries.

Potential content:

A factual description of aquaculture activities in the ecoregions, similar to the fisheries overviews, and thus focussing on:

- who is producing;
- what are they producing;
- status over time;
- environmental impacts;

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- management measures to deal with these impacts (nationally, European-wide, and globally);
- potentially also including socio-economic issues.

Expected timeline

- The internal scoping process should be planned for the end of 2016 / beginning of 2017. Dependent on the outcome, and the status of the ToRs, membership, and proposed groups, an external scoping process is expected in the latter part of 2017.
- The process must ensure that aquaculture experts in the ICES Community willing to contribute will be made an integral part of the entire process.

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At the 2015 Council meeting many interlinked science issues were discussed, therefore it was agreed that a joint Council /SCICOM group should be created to discuss these issues and prepare recommendations for Bureau to consider when preparing a document for Council approval.

The group consists of three components, which are interrelated but also have three quite distinct ToRs and memberships, however, overseen by the two co-chairs and Vice-Presidents Tammo Bult, NL and Pierre Petitgas, FR.

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Co-Chairs of the overall group Tammo Bult and Pierre Petitgas

Support by Ellen Johannesen, Coordinating Secretary, and Vivian Piil, SCICOM Departmental Secretary

Component	ToRs	Group members	Achievements / Updates
Strengthening the Science Leadership	(1) To develop a detailed job description for a full time SCICOM chair, particularly in relation to the implementation of the ICES Strategic Plan and making best possible use of Secretariat resources in accordance with SCICOM needs; Lead by Yvonne, with input from 1) SCICOM, 2) Coordination Group (the Heads of the four pillars, Head og Science programme and Head of Advisory Support) and 3) Council representatives (2) To suggest tasks for a full time Head of Science support, for use by the General Secretary, in relation to ensuring optimal mobilization of the expertise and capacity within the Secretariat to support the work of SCICOM, and the SCICOM Chair; Lead by Anne Christine, with input from Adi and Science Department in Secretariat **Important for leads of 1 and 2 to coordinate and align their outlines** (3) To outline a recruitment process and timeline for the Chair of SCICOM. Lead by Anne Christine	Will comprise **two** representatives of **Council**, **two** representatives of **Bureau**, **two** representatives of **SCICOM** (to be decided by SCICOM), the SCICOM Chair, Head of Science Programme, the ACOM Chair, Head of Advice Support, Head of Data and Information services, the General Secretary, and staff representation. **Three Council representatives:** Niall Ó Maoiléidigh (IE) Olafur Astthorsson (Iceland), Gerd Kraus (Germany)	ToRs 1) to 3) were accomplished leading to the recruitment of a SCICOM Chair and the appointment of a Head of Science Support ToR 4) was accomplished leading to the decision to continue with SSG Chairs within SCICOM. A working budget for them was agreed by Finance and June Bureau

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Component	ToRs	Group members	Achievements / Updates
	(4) To explore possible responsibilities and tasks in the SCICOM leadership in order to align working procedures to the new leadership structures, for further specification in the SCICOM proposal to Finance Committee. Suggestion: Lead by Yvonne, ensuring input from 1) SCICOM representatives, and 2) ensuring input from the coordination group to ensure integration between pillars (5) To elaborate the scope and timeline for the review of the leadership structures of ACOM and SCICOM, as outlined in No 7 (No 7 states: "The leadership structures of both ACOM and SCICOM will be reviewed early 2019. The results of the review will be presented to Council in October 2019 and the Council will be invited to discuss possible amendments to the structures. (Should be aligned with the development of the new ISP, and the evaluation process for the ACOM Chair)") Lead by the Council representatives	**Three Bureau representatives** Bill Karp (US) (+ the co-chairs) **Three SCICOM representatives:** Jörn Schmidt (Germany), Laura Uusitalo (Finland, , Henn Ojaveer (Estonia),	ToR 5) was accomplished. A review process is proposed to Council
Review of ICES Science	1. Develop an explicit list of what ICES wants to learn from this exercise 2. Recommend if the review should be conducted internally and/or externally	It is suggested to organize this in two steps: Step 1 Lead by the **Co-Chairs** Pierre Petitgas and Tammo Bult, and with	A questionnaire was developed on the perceptions of ICES and its Science and sent both internally

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Component	ToRs	Group members	Achievements / Updates
	3. Develop a list of specific questions to solicit feedback on ICES science, also with a clear view on who will be asked for feedback and asking for suggestions for improvements 4. Establish a time frame of the review process 5. Describe how results could be disseminated 6. Develop actions based on the results and building on the explicit list in point 1.	support from Anne Christine Brusendorff Step 2 – awaiting the discussion in February Bureau meeting **Co-Chairs** Pierre Petitgas and Tammo Bult SCICOM Chair, ACOM Chair, Head of Science Programme, Head of Advice Support, Head of Data and Information services, the General Secretary, **SCICOM SSG Chairs** (Nils Olaf Handegard, NO, Henn Ojaveer, EE, Dave Reid, IE, Graham Pierce, UK, Jörn Schmidt, DE)	and externally (e-survey). An Open session was held at the ASC on Challenges to ICES, in the format of role play. Results are gathered in the report of the ASC session. Council feedback will help to define how to move forward.

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Component	ToRs	Group members	Achievements / Updates
Science Funding	PROPOSAL for ToRs 1. Based on input provided by SCICOM, evaluate the 2014 and 2015 investment in the Science Fund in terms of how successful the funds used have been to help realize the goals of ICES Strategic Plan, ensure a link between government laboratories and academia, as well for capacity building, and involvement of new scientists in ICES work. Lead: Yvonne 2. Prepare a list of pros and cons, including examples of added value to the ICES (both science and advice), on whether to maintain ICES as a "science funder", based on: i) an evaluation if the current value of the science fund sufficiently satisfies any perceived benefit, and ii) the SIF support SCICOM has received since 2009, *i.a.*, for its Strategic Initiatives. Lead; co-chairs Tammo and Pierre, with input from the group 3. Review the request for investment in SCICOM activities (refer to CM 2015 Del 3.4.2 amended). Strategic criteria – to evaluate outcome and its usefulness (how did it make a difference) Lead: Yvonne	**Co-chairs** Tammo Bult, NL and Pierre Petitgas, FR **Finance Committee Chair** Piotr Margoński, PL **Bureau:** Fritz Köster, first Vice-President, Bill Karp (US) **SCICOM:** SCICOM Chair, Head of Science Programme, And three SCICOM representatives Jörn Schmidt (Germany), Laura Uusitalo (Finland, Henn Ojaveer (Estonia), **Council:**	SCICOM provided Bureau with an assessment of the Science Fund. SCICOM provided a plan of strategic activities to Finance Committee, which advised June Bureau on financial capacities. June Bureau set a plan for Financial support to SCICOM activities. SCICOM has initiated a mapping exercise to identify external partners, which will

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Component	ToRs	Group members	Achievements / Updates
	4. Consider the role of SCICOM in ensuring funding for research priorities to implement the ICES Strategic Plan Lead: Yvonne, with input from 1) SCICOM, and 2) coordination group 5. Consider if there are external funding sources and/or how these can be procured, and if they are appropriate. Lead: Yvonne, Adi, and Anne Christine	Three Council representatives: Niall Ó Maoiléidigh (IE) Olafur Astthorsson (Iceland), Gerd Kraus (Germany) ACOM Chair, Head of Advice Support, Head of Data and Information services, the General Secretary	contribute to points 4 and 5. Objective targets on the topic with new SCICOM Chair will follow.

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Strengthening the Science Leadership

ICES CIEM International Council for the Exploration of the Sea Conseil International pour l'Exploration de la Mer

May 2016

Vacancy for the Post of ICES Science Committee Chair

The International Council for the Exploration of the Sea (ICES) seeks applications for a full-time Chair of the Science Committee (SCICOM). The ideal candidate will lead and develop ICES Science, and motivate the international scientific network to achieve the goals of the ICES Strategic Plan[1].

The Chair will interact with a multifaceted international organization, and work across all parts of the organization, including the scientific expert groups, the Advisory Committee, the Data and Information Group, and the Secretariat.

Responsibilities of the Chair

The Chair will work to strengthen ICES role and impact as a knowledge provider, based on engagement with the ICES community and partner organizations. The Chair shall develop the strategic vision for ICES Science and contribute towards realizing the goals of the organization, and will take a leading role in the next ICES Strategic Planning cycle; 2019–2023.

The Chair will also need to ensure further integration of ICES science into the ICES advisory processes, with the aim of enhancing the contribution to integrated advice. This includes engaging with Stakeholders and promoting ICES science and services to a broad audience.

The Chair will lead the work of SCICOM, a committee of 20 national scientific representatives, and a large expert network that constitutes the basis for conducting the scientific work.

Required qualifications and experience

The successful candidate will:

- Be an internationally recognized and respected scholar within marine science.
- Be visionary and able to develop the scientific focus areas of the organization.
- Demonstrate leadership skills, including the ability to engage and motivate a large voluntary network of expert groups.
- Demonstrate an understanding of the interaction between science and advisory processes.

1http://ices.dk/explore-us/what-we-do/Pages/Our-strategy.aspx

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- Possess collaborative skills with an ability to work with people from diverse national and cultural backgrounds.
- Be ready to travel, and be able to work flexibly to meet the organization's needs.
- Be fluent in both spoken and written English.

Recruitment Procedure

All applications will be reviewed by a recruitment panel with representatives from all parts of the organization. A short-list will be developed based on how well applicants match the qualifications listed above and those selected for interviews will be contacted. The process will follow the expected timeline below:

- Vacancy announcement: May, 2016, deadline end August, 2016

- Applications reviewed, shortlisting: September, 2016

- Recruitment process/interviews: September/October 2016

-Council approval: October, 2016

- Start date: January 2017

Terms of appointment

The appointment will be for a period of three years, with possibility for a three year extension. The position will be based in the ICES Headquarters in Copenhagen. The SCICOM Chair will report to Bureau (executive board), and Council (Governing board), comprising representatives from all ICES Member Countries.

The honorarium for the full-time post is exempt from Danish income tax and is based on, but not identical with, P5, V of the UN Staff scale, ICES will assist with relocation costs. The Chair will be entitled to the benefits and immunities accorded to officials of the organization as outlined in the Host Agreement. The Chair is independent from the Secretariat and is, therefore, expected to make the appropriate arrangements for pension and insurance.

Copenhagen is a multi-cultural city, and with many English speaking work places, offering opportunities for accompanying family members.

Applications

Applications should be submitted by e-mail to: **applications@ices.dk no later than 31 August 2016**. Please mark you application SCICOM Chair.

Additional information can be obtained from Anne Christine Brusendorff, General Secretary. Information about ICES is available at http://www.ices.dk.

ICES is an equal opportunity organization committed to inclusion and diversity.

About ICES

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The International Council for the Exploration of the Sea (ICES) is a global organization that develops science, advice, and related data products to support the sustainable use of the oceans. ICES is a network of more than 5000 scientists from over 560 marine institutes in 20 member countries and beyond. 2500 scientists participate in ICES activities annually.

ICES International Council for the Exploration of the Sea
CIEM Conseil International pour l'Exploration de la Mer

Vacancy for the Post of Advisory Committee Chair

The International Council for the Exploration of the Sea (ICES) is a global organization that develops science, advice, and related data products to support the sustainable use of the oceans.

ICES is a network of more than 4000 scientists from over 350 marine institutes in 20 member countries and beyond. 1600 scientists participate in ICES activities annually

ICES seeks applications for a full-time Chair of the Advisory Committee (ACOM). The post will be stationed at ICES Headquarters in Copenhagen. The Chair is responsible for the delivery and strategic development of ICES Advice. ICES provides marine science advice to competent authorities at a range of scales and complexity, from single fish stocks to multi-species and mixed fisheries, and now developing integrated ecosystem-based advice, in accordance with the ICES Strategic Plan, 2014–2018. [2]

The Chair must be familiar with the requirements of integrated marine policies, focussing on integrated ecosystem understanding as the basis for policy advice. The Chair must also be able to lead and give directions to the work of ACOM, a committee of 20 national scientific representatives, Vice-Chairs (currently 3) and about 80 alternates, as well as a large expert network that supports the advisory process.

The Chair will interact with a multifaceted international organization and will work with all parts of the organization. This will specifically include the advisory team (13 staff members), the Head of the Advisory Support, and other colleagues in the Secretariat (54 staff members). With a focus on development of more integrated advice, it will be vital to work across the organization, including with the Science Committee, the Data and Information Group, and Secretariat.

Responsibilities of the Chair

The Chair is responsible for overseeing the delivery of the ICES advice; timely, quality assured and science based, following the ICES process. The

2 http://www.ices.dk/explore-us/what-we-do/Pages/Our-strategy.aspx

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Chair must ensure that ICES continues to respond to advisory requests, currently mainly focused on providing fisheries advice in relation to more than 250 stocks, and impacts of fisheries in the ecosystem. However, the Chair must also be able to develop ICES advice to meet the demands of evolving maritime policies, and supporting the ICES decision to provide integrated ecosystem advice as outlined in the ICES Strategic Plan, 2014–2018. Annually ICES gets more than 30 requests for advice on such issues. The Chair will also be involved in drawing up the upcoming ICES Strategic Plan; 2019–2023.

Engaging with the ICES community, its many Expert Working Groups (more than 90), and specifically the Advisory Committee, with the support of three vice-chairs (two specifically dealing with fisheries and one with ecosystem matter), as well as others with the competencies to develop and provide integrated advice is an important task of the Chair.

The Chair will also be expected to cooperate closely with all parts of ICES organization by participation in the Coordination Group (General Secretary, Head of Data and Information Department, Chairs of Science and Advisory Committees), to ensure the further integration between ICES science, data, and advice, aiming to promote and organize the provision of integrated advice in the most efficient and effective way.

The Chair will be responsible to maintain and develop contacts with established and new clients, as well as the identification of new means of cooperation, and innovative ways of delivering reliable advice.

Engaging with Stakeholders and promoting communication of ICES process, products, and work to a broad audience is also within the remit of the Chair.

The ACOM Chair will be directly responsible to ACOM, with quarterly reporting to Bureau (Executive Board) and annual reporting to Council (Governing board, comprising representatives from all ICES Member Countries).

Required qualifications and experience

- An education from a recognized university in a marine biological or environmental science discipline or equivalent, followed by at least ten years of work experience within a marine-science discipline;
- Professional experience in assessments of marine ecosystems, including fisheries assessments;
- Experience with the challenges of converting scientific knowledge into policy advice;
- Good knowledge of the scientific infrastructure, developing advisory needs and marine research programmes in ICES Member Countries;
- Good knowledge of European and North Atlantic marine management policies and their institutional structures as well as demonstrable experience working with a range of recipients of ICES advice;

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- Demonstrated leadership, including strategic, and organizational skills;
- Ability to work with people from diverse national and cultural backgrounds;
- Readiness to travel, and the ability to work flexibly to meet the organization's needs; and
- Fluency in both spoken and written English is essential.

Recruitment Procedure

All applications will be reviewed by a recruitment panel with representatives from all parts of ICES Organization. A short-list will be developed based on how well applications match the qualifications listed above. The Advisory Committee will further refine the short-list by selecting candidates who will advance to the interview round. Based on the interviews the panel will make a priority ranking of candidates. Council will approve the priority ranking to ensure that the process has been carried out according to the established procedure.

Expected timeline:

- Vacancy announcement: April-May, 2016, deadline end August, 2016

- Applications reviewed, shortlisting: September, 2016

- Recruitment process/interviews: September/October 2016

- Council approval: October, 2016

- Start date: December 2016 - January 2017

Terms of appointment

The appointment will be for a period of three years, with possibility for a three year extension. The position will be based in the ICES Headquarters in Copenhagen.

The honorarium for the full-time post is exempt from Danish income tax and is based on, but not identical with, P5, V of the UN Staff scale. ICES will assist with relocation costs. The Chair will be entitled to the benefits and immunities accorded to officials of the organization as outlined in the Host Agreement. The Chair is independent from the Secretariat and is, therefore, expected to make the appropriate arrangements for pension and insurance.

Copenhagen is a multi-cultural city, and with many English speaking work places, offering opportunities for accompanying family members.

Applications

Applications should be submitted by e-mail to: **applications@ices.dk no later than 26 August 2016**. Please mark you application ACOM Chair.

Additional information can be obtained from Anne Christine Brusendorff, General Secretary or Cristina Morgado, Head of Advisory Support. Information about ICES is available at http://www.ices.dk.

ICES is an equal opportunity organization committed to inclusion and diversity.

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Review of the Leadership

Table 1. Tabular outline of proposed Review Process and Timeline to Evaluate Changes to Science Leadership Structures

	SCICOM Chair	SCICOM HOSS	SG Chairs	SCICOM
Changes in Leadership structure under review	Full time chair with extended responsibilities	Head of Science role changed to Head of Science Support with modified duties	5 SG chairs change to 2 SCICOM SGs (EPI + EPD) and 3 SCICOM/ACOM SGs (Benchmark, IEA, IEOM)	Operational changes and greater links with ACOM and Data services
Targets to be established relating to improving delivery of ISP and integration across 4 pillars	Chair to set targets (for SCICOM and Council approval) based on formal job description and responsibilities assigned	HOSS to set targets (for SCICOM and Council approval) based on formal job description and responsibilities assigned	SSGs to set targets based on Predefined performance evaluation procedure for ISP Goals 1 and 2 outlined in Implementing the ICES Strategic Plan (IISP), page 19 and Annex 1 ,	SCICOM sub group to set targets based on Predefined performance evaluation procedure for ISP Goals 1 and 2 outlined in Implementing the ICES Strategic Plan (IISP), page 19 and Annex 1 ,
Timeframe for establishing targets for review	1st Quarter 2017	1st Quarter 2017	1st Quarter 2017	1st Quarter 2017
Who should report progress ?	SCICOM Chair for 1st Quarter 2018 and 1st Quarter 2019	SCICOM HOSS for 1st Quarter 2018 and 1st Quarter 2019	SSG Chairs for 1st Quarter 2018 and 1st Quarter 2019	SCICOM for 1st Quarter 2018 and 1st Quarter 2019
Who should review progress ?	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures
Other outputs to consider in review			Mapping exercise, SSG Annual Report to SCICOM	Mapping exercise, SCICOM Annual Report to Council
			Feedback from Expert Group	Feedback from Expert Group

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			Chairs (e.g., annual Chairs meeting or questionnaire)	Chairs (e.g., annual Chairs meeting or questionnaire)
Provisional review timeframe	Provisional review in 2nd Quarter 2018.	Provisional review in 2nd Quarter 2018.	Depends on how IISP is to be implemented but should be a provisional review 2nd Quarter 2018	Depends on how IISP is to be implemented but should be a provisional review 2nd Quarter 2018
Full review timeframe	Main review 1st Quarter 2019	Main review 1st Quarter 2019	Main review 1st Quarter 2019	Main review 1st Quarter 2019
Report to Council	Third Quarter 2019	Third Quarter 2019	Third Quarter 2019	Third Quarter 2019
	ACOM Chair	ACOM HOAS	Vice Chairs	ACOM
Changes in Leadership structure under review	Full time chair with extended responsibilities	Head of Advice role changed to Head of Advice Support with modified duties	No change - 3 vice chairs as previously	Operational changes and greater links with SCICOM and Data
Targets to be established relating to improving delivery of ISP and integration across 4 pillars	Chair to set targets (for ACOM and Council approval) based on formal job description and responsibilities assigned	HOAS to set targets (for ACOM and Council approval) based on formal job description and responsibilities assigned	Vice chairs to set targets based on predefined performance evaluation procedure for ISP Goal 3 outlined in Implementing the ICES Strategic Plan (IISP) Annex 2	ACOM sub group to set targets based on predefined performance evaluation procedure for ISP Goal 3 outlined in Implementing the ICES Strategic Plan (IISP) Annex 2
Timeframe for establishing targets for review	1st Quarter 2017	1st Quarter 2017	1st Quarter 2017	1st Quarter 2017

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Who should report progress ?	ACOM Chair for 1st Quarter 2018 and 1st Quarter 2019	ACOM HOAS for 1st Quarter 2018 and 1st Quarter 2019	Vice Chairs for 1st Quarter 2018 and 1st Quarter 2019	SCICOM via sub group for 1st Quarter 2018 and 1st Quarter 2019
Who should review progress ?	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures	Council Review Group on Leadership Structures
Other outputs to consider in review				ACOM Annual Report to Council
			Feedback from Expert Group Chairs (e.g., annual Chairs meeting or questionnaire)	Feedback from Expert Group Chairs (e.g., annual Chairs meeting or questionnaire)
Provisional review timeframe	Provisional review in 2nd Quarter 2018.	Provisional review in 2nd Quarter 2018.	Depends on how IISP is to be implemented but should be a provisional review 2nd Quarter 2018	Depends on how IISP is to be implemented but should be a provisional review 2nd Quarter 2018
Full review timeframe	Main review 1st Quarter 2019	Main review 1st Quarter 2019	Main review 1st Quarter 2019	Main review 1st Quarter 2019
Report to Council	Third Quarter 2019	Third Quarter 2019	Third Quarter 2019	Third Quarter 2019

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Table 2. Tabular outline of High Level Review and Evaluation Based on Outputs from Target Progress Reports, Annual Reports and Mapping Exercises.

WHAT SHOULD BE REVIEWED?	**INPUTS REQUIRED**				
Review of Science Leadership structures to evaluate whether these changes contributed positively to the implementation of the ICES Strategic Plan (ISP) between 2017 and 2018 and resulted in better integration across the four pillars of ICES i.e. ACOM/SCICOM/Data/Secretariat.	**Most of the input required can be generated from the target progress reports and reviews of SCICOM and ACOM reports and mapping exercises.**	**Have changes to Science Leadership structure contributed positively to ISP Yes/No ?**			
Have the ISP Goals been met ?	**Measurables**	**Notable contribution**	**Marginal contributi on**	**Not seen**	**Negative contribution**
Goal 1 Develop an integrated, interdisciplinary understanding of the structure, dynamics, and the resilience and response of marine ecosystems to change	Progress reports from SCICOM Chair, Head of Science Support, SSG chairs, SCICOM and review of Scicom Annual Report, Mapping Exercise, Feedback from EG Chairs				
Goal 2 Understand the relationship between human activities and marine ecosystems, estimate pressures and impacts, and develop science-based, sustainable pathways	Progress reports from SCICOM Chair, Head of Science Support, SSG chairs, SCICOM and review of Scicom Annual Report, Mapping Exercise, Feedback from EG Chairs				
Goal 3 Evaluate and advise on options for the sustainable use and protection of marine ecosystems	Progress Report from ACOM Chair, Head of Advice Support, ACOM Vice Chairs, ACOM and review of ACOM Annual Report, Feedback from EG Chairs				
Goal 4 Promote the advancement of data and information science and advice needs.	Outputs from the above progress reports and reviews relevant to this Goal				
Goal 5 Catalyse best practices in marine data management, and promote the ICES data nodes as a global resource.	Outputs from the above progress reports and reviews relevant to this Goal				
Goal 6 Foster the science, advisory, data and information services through the work of the Secretariat.	Outputs from the above progress reports and reviews relevant to this Goal				
Goal 7 Ensure an efficient and effective organization	Outputs from the above progress reports and reviews relevant to this Goal				

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Management of advice and science processes	**Most of the input required can be generated from data which the secretariat has or could get**	**Have changes to Science Leadership structure contributed to improving management of advice and science processes Yes/No ?.**			
Have Improvements been seen:	**Measurables**	**Notable contribution**	**Marginal contribution**	**Not seen**	**Negative contribution**
Have advice and science processes been more integrated across the four pillars of ACOM/SCICOM/DATA/Secretariat ?	Examine communications and joint meetings/reports or other outputs produced				
Have communications with clients improved ?	Record positive feedback received, repeat advice sought, New advice sought				
Have communications with collaborators improved ?	Continued collaborations, negative and positive feedback				
Have new synergies formed within ICES and outside of ICES with other governmental organisations and Institutes to facilitate the delivery of science products and the establishment of specific activities leading to greater science co-operation ?	What new collaborations have emerged ?				
Has there been a measurable increase in quality or timely provision of advice ?	Feedback on quality was it all good ? Retrospectively was advice accurate.				
Has capacity to deal with requests for advice increased ?	Seek feedback from ACOM/SCICOM/Secretariat				
Has capacity of secretariat to deal with EGs/advice delivery/ASC/Symposia/ publications/training etc. improved ?	Seek feedback from Secretariat. Has time spent decreased due to streamlining? Is process more efficient? Is the manpower adequate to handle changes?				
Has this new leadership structure streamlined the ICES advice and science process generally?	Use outputs from measurables above to evaluate this				

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Review of ICES Science

ASC Open Session: ICES Science – a quest for impact

Conveners: Tammo Bult, Pierre Petitgas, Anne Christine Brusendorff, Ellen Johannesen, Cornelius Hammer

Summary:

Results from the electronic survey on perceptions of ICES and ICES-Science was presented, indicating overall satisfaction with ICES:

- Respondents were familiar with ICES and its products and could easily easy distinguish between advice, science & data; ICES importance was not seen as declining.
- ICES could be more pro-active when it comes to agenda-setting, communication & dissemination products.
- ICES should broaden beyond fisheries, including topics such as socioeconomics, ecosystem-approaches and industries including aquaculture and the maritime sectors.
- ICES makes an effort to be an inclusive organisation.

However, respondents were mostly part of the regular ICES-network and little external input was received. After this brief review, the session continued with a discussion on topics relevant to ICES and its position, using a "debate-style-set-up" and the following statements:

The rule of this "game" included:

1. Statements are proposed that require a YES or NO position;
2. State your position by moving to the correct side of the room;
3. Convince "the other side" of your position;
4. The person creating most "converts" wins.

The results were further discussed in Bureau later that day and it was decided to repeat the exercise in Council as a basis for further discussion and direction.

David Miller won the debate and received the prize (a bottle of Black Balsam).

Those interested in participation of the electronic survey and its result can send an email to Ellen.Johannesen@ices.dk.

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PROPOSAL Science Funding

Extract from Minutes of Bureau meeting 245

Action: Bureau approved the recommendations of Finance Committee, and specifically agree to:

- Maintain the Capital Reserve Fund at 20% of total income.
- The SCICOM proposal to use 500,000 DKK (core funding/annually) for supporting the work of SSG Chairs, funds are to be used according to a work plan and framework administrative guidelines to be developed with the incoming SCICOM Chair and reviewed by Bureau and Council.
- The SCICOM Proposal to use 50,000 DKK (core funding/annually) for a Science Working Group Chairs meeting.
- Discontinue the Science Fund.
- To respond to the request for funding of Strategic Initiatives, action areas, and cooperation with scientific partners with 350,000 DKK (from equity) for three years, 2017, 2018, and 2019.
- Allocate 1,300,000 DKK from equity, (300,000 DKK redirected from the Demonstration Advice) to support the proposal outlined by the Coordination Group with emphasis on finding most efficient use of resources to support further development of training, data & information, and aquaculture overviews.

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Finance Committee

Finance Committee met 20 June 27 May. Bureau reviewed and commented on the report of the Finance Committee at their June meeting.

Council is requested to:

- ***Approve*** *the final accounts 2015, including Audit Book; (This document)*
- ***Vote*** *on the proposed budget for 2017, noting that the national contributions have already been decided;* ***(CM 2016 Del-3.1.2****)*
- ***Discuss*** *a long-term strategy for achieving increases in the national contributions, including how to deal with the vote on the forecast budget for 2018. (****CM 2016 Del-3.1.3****)*

This compilation includes:

- Final accounts 2015 including:
  - Letter of Representation
  - Statement on the Final Accounts for 2015
  - Final Accounts 2015
  - Audit Book Comments on the Final Accounts 2015
- Report of Finance Committee
- Status Report 30 April 2016
- Proposed Budget 2017 and Forecast Budget 2018
- Programme Budgets
- Projects
- Development of the Capital Reserve Fund
- CRF level
- Development of the Strategic Investment Fund
- Strategy for increases in national contributions
- Development of equity
- Proposed Science investments
- Proposed investments for implementation of the ICES Strategic Plan

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ICES CIEM International Council for the Exploration of the Sea Conseil International pour l'Exploration de la Mer

Finance Committee

June 2016

Doc 2

Agenda item 2

Accounts 2015, Audit book comments on the Final Accounts 2015, and report

The Final Accounts 2015 have been audited by Deloitte. The members of the Finance Committee are required to approve and sign the Final Accounts 2015 and the Audit book comments on the Final Accounts 2015.

In the following pages:

1. Letter of Representation (To be signed by Anne Christine Brusendorff and Kirsten Gudmansen)
2. Statement on the Final Accounts for 2015 (To be signed by Piotr Margonski)
3. Final Accounts 2015 (To be signed by Finance Committee)
4. Audit Book Comments on the Final Accounts 2015 (To be signed by Finance Committee)

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Deloitte Statsautoriseret Revisionsaktieselskab
Attn.: Peter Z. Skanborg
Weidekampsgade 6
P.O. Box 1600
0900 Copenhagen C
Denmark

Letter of representation on the Final Accounts for 2015

We submit this letter of representation in connection with your audit of the Final Accounts 2015. The Final Accounts shows a loss of DKK 575k, total assets of DKK 48.791k, and equity of DKK 23.489k, and we confirm to the best of our knowledge:

1. That we are aware that Management is responsible for preparing the Final Accounts in accordance with Rule 18 of the Rules of Procedures, and for the Final Accounts giving a true and fair view of the organisation's financial position and the results of its activities, and for the General Secretary's review containing a fair review of the affairs and conditions referred to therein.

2. That the Organisation's capital resources, including its financial position, and its future prospects support the application of the principle of going concern.

3. That the management commentary contains all the required information, also for the purpose of evaluating the profit/loss for the year and the financial position.

4. That the General Secretary's review and the Final Accounts comprise the required disclosures about any unusual or uncertain circumstances.

5. That we are aware of Management's responsibility for the design and implementation of internal controls to prevent and detect fraud.

6. That we have disclosed the results of our assessment of the risk that the Final Accounts and the General Secretary's review may be materially misstated as a result of fraud.

7. That we are not aware of information on known, alleged or suspected fraud that may have involved Management, employees who have significant roles in internal control, or others where the fraud could have a material effect on the annual report.

8. That the Final Accounts does not contain material misstatements.

9. That we have made available all accounting records and supporting documentation up to this date.

10. That the disclosures provided to Deloitte on related parties are correct and complete.

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11. That we have provided information about all existing or possible violations of law or other regulations of relevance to the Final Accounts.

12. That the Organisation has complied with all aspects of contractual agreements that could have a material effect on the Final Accounts in the event of non-compliance.

13. That all assets have been recognised in the balance sheet, that these assets exist and belong to the Organisation, and that they have been measured reliably, and also that any impairment losses, etc are adequate to match the risk associated with the assets.

14. That there are no liens or encumbrances etc on the Organisation's assets other than what is disclosed in the Final Accounts.

15. That all existing liabilities and contingent liabilities incumbent on the Organisation have been recognised or disclosed in the Final Accounts, and that these items have been measured reliably.

16. That there are no pending or threatening claims for damages, lawsuits, tax cases, etc or contingent liabilities such as pension, recourse and non-recourse guarantee commitments or financial obligations, including currency exposure and lease commitments, other than those disclosed in the Final Accounts which could have a material influence on the evaluation of the Organisation's financial position.

17. That we have no plans or intentions that may materially alter the carrying value or classification of the assets and liabilities reflected in the Final Accounts.

18. That such insurance policies have been taken out as are considered sufficient in the Organisation's circumstances to cover any situations of loss which the Organisation might experience.

19. That all transactions carried out in the financial year under review have been carried out on an arm's length basis.

20. That no events have occurred after the balance sheet date to this date which influence the evaluation of the Final Accounts, and which require adjustment of or disclosure in the General Secretary's review or notes to the Final Accounts.

Copenhagen, 2 May 2016

International Council for the Exploration of the Sea

Anne Christine Brusendorff, General Secretary

Kirsten Gudmandsen, Finance Officer

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Deloitte Statsautoriseret Revisionspartnerselskab
Attn.: Thomas Wikkelsø
Weidekampsgade 6
P.O. Box 1600
0900 Copenhagen C
Denmark

Statement on the Final Accounts for 2015

This statement is given in connection with the audit of the Final Accounts for 2015. On behalf of the Finance Commitee, I confirm the following to the best of my knowledge:

1. That the Finance Committee is aware of Management's responsibility for designing and implementing internal controls to mitigate and detect fraud.

2. That the Finance Committee does not consider a specific risk of fraud to exist and that the organisation has an efficient control environment mitigating the risk of material misstatement in the Final Accounts, including misstatements in the Final Accounts as a result of fraudulent financial reporting or misappropriation of the organisations assets.

3. That the Finance Committee has no knowledge of information about actual, presumed or alleged fraud which may have involved Management or staff and which may be material for the Final Accounts.

Copenhagen,

International Council for the Exploration of the Sea (ICES)

Piotr Margonski
Chairman of Finance Commitee

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International Council for the Exploration of the Sea

Final Accounts 2015

https://doi.org/10.17895/ices.pub.22303573

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Organisation details

Organisation

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General Secretary

Anne Christine Brusendorff

Finance Committee

Chair: Piotr Margonski, Poland

Current members: Alain Vezina, Canada; Fritz Köster, Denmark; Ari Leskelä, Finland; Tomas Zolubas, Lithuania.

Organisation auditors

Deloitte Statsautoriseret Revisionspartnerselskab

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General Secretary's and Finance Committee's statement

The General Secretary and the Finance Committee have today considered and approved the Final Accounts of International Council for the Exploration of the Sea (hereafter "the Council" or "ICES") for 2015.

The Final Accounts have been prepared in accordance with Rule 18 of the Rules of Procedures.

We consider the accounting policies applied appropriate and the accounting estimates made reasonable. Therefore, in our opinion, the Final Accounts give a true and fair view of the financial position at 31 December 2015 of the International Council for the Exploration of the Sea and of the result of its operations for the financial year 1 January to 31 December 2015.

We believe that the General Secretary's review contains a fair review of the affairs and conditions referred to therein.

We recommend that the Final Accounts be adopted.

Copenhagen, 28 May 2016

General Secretary

Anne Christine Brusendorff

Having examined the Final Accounts, we recommend that the Bureau submit the document to the Members of the Council for approval.

Finance Committee

Chair: Piotr Margonski, Poland

Current members: Alain Vezina, Canada; Fritz Köster, Denmark; Ari Leskelä, Finland; Tomas Zolubas, Lithuania.

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Independent auditor's reports

To the members of International Council for the Exploration of the Sea
Report on the Final Accounts

We have audited the Final Accounts of International Council for the Exploration of the Sea for the financial year 1 January to 31 December 2015, which comprise the accounting policies, income statement, balance sheet and notes. The Final Accounts have been prepared in accordance with Rule 18 of the Rules of Procedures.

General Secretary's and Finance Committee's responsibility for the Final Accounts

The General Secretary and Finance Committee are responsible for the preparation and fair presentation of Final Accounts that give a true and fair review in accordance with Rule 18 of the Rules of Procedures and for such internal control as Management determines is necessary to enable the preparation of Final Accounts that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these Final Accounts based on our audit. We conducted our audit in accordance with Rule 20 (VII) of the Rules of Procedures adopted by the Council on 20 October 2005, International Standards on Auditing and additional requirements under Danish audit regulation. This requires that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Final Accounts are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Final Accounts. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the Final Accounts, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of Final Accounts in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by The General Secretary and Finance Committee, as well as evaluating the overall presentation of the Final Accounts.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Our audit has not resulted in any qualification.

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Independent auditor's reports

Opinion

In our opinion, the Final Accounts give a true and fair view of the International Council for the Exploration of the Sea's financial position at 31 December 2015 and of the results of its operations for the financial year 1 January to 31 December 2015 in accordance with Rule 18 of the Rules of Procedures.

Statement on the General Secretary's review

We have read the General Secretary's review. We have not performed any further procedures in addition to the audit of the Final Accounts. On this basis, it is our opinion that the information provided in the General Secretary's review is consistent with the Final Accounts.

Copenhagen, 28 May 2016

Deloitte
Statsautoriseret Revisionspartnerselskab
CVR-nr. 33 96 35 56

Peter Z. Skanborg
State Authorised Public Accountant

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General Secretary's review

General Operating Principles

The operations of the International Council for the Explorations of the Sea (hereafter ICES) are governed by the 1964 Convention agreed among the 20 Contracting Parties[1] and entered into force on 22 July 1968.

According to Article 2 of the Convention ICES shall be concerned with the Atlantic Ocean and its adjacent seas and primarily concerned with the North Atlantic, with the main goal:

(a) to promote and encourage research and investigations for the study of the sea particularly those related to the living resources thereof;

(b) to draw up programmes required for this purpose and to organize, in agreement with the Contracting Parties, such research and investigations as may appear necessary;

(c) to publish or otherwise disseminate the results of research and investigations carried out under its auspices or to encourage the publication thereof.

In addition the 2002 Copenhagen Declaration stress the need for ICES to strengthen working relationships with users of scientific information on living marine resources and marine ecosystems, including fisheries management organizations and environmental commissions and with stakeholders that are effected by or have an interest in, ICES work, thus requiring that ICES:

- apply quality assurance scheme for its advisory function;
- adopt procedures to consider the full consideration of data from a wide range of stakeholders;
- be flexible and timely in providing scientific advice to meet the needs of decision makers responsible for the stewardship of living marine resources and marine ecosystems without compromising the quality or reliability of the advice;
- ensure that ecosystem considerations, including the effects of human activities and climatic and oceanographic conditions are taken into account;
- frame advice in relation to fisheries management, giving full consideration to the ecosystem context

The ICES Secretariat is located in Copenhagen, Denmark. A Host Agreement between the Government of Denmark and ICES on the office and the privileges and immunities entered into force on 24 July 1968.

The Council is an international legal entity with the capacity to enter into contracts, to acquire and dispose of immovable and movable property, and institute legal proceedings. The Council and its property, income and expenditures are also exempt from all national direct and other taxes or duties.

[1] Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, United Kingdom, and the United States of America.

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Primary activities

The Final Accounts for the year 2015 show total revenue for ICES of 42,989,091 DKK, of which 21,935,000 DKK was from national contributions. Another major component was income received from Recipients of Scientific Advice in the amount of 15,026,677 DKK.

General Secretary's review

The result of revenue and expenditures was a deficit of 575,272 DKK which is within the budgeted amount and a result of ICES decision to support the arrangements of the ASC in Copenhagen and for the 2015 Science Fund.

National contributions to ICES are due in advance, or by the end of January of the budget year, at the latest. However, by the end of 2015, only half (50%) of the national contributions due for 2015 were received, which is almost the same % as for the budget year 2014. There are no longer any outstanding contributions from previous years.

This continuing trend of late payments by Member Countries, influences the liquidity and could lead to increased financial risk for the budgets. As a consequence, in 2010 Council decided to increase the Capital Reserve Fund (CRF) to 20% of total income. These late payments are the reason ICES has agreed to a repurchase agreement (repo), a form of short-term borrowing with security in the CRF, and without additional expenses for ICES.

Development in activities and finances

Apart from the 1.9% increase in 2016 national contributions, in five years, during a six year time-frame the national contributions have remained stable. The relative share of national contributions in 2015 was 51%.
On the expenditure side, salaries increased with the cost of living (based on the Danish inflation rate) and with the step increases. The secretariat salary cost in 2015 was 32,286,018 DKK including honorarium for ACOM Chairs and SCICOM Chair. Following the Council's directions to achieve full cost recovery for the advisory services, an increasing share of the salary costs are covered by MoUs, however, this also increases the risk for future budgets in case the re-negotiations of the MoUs would result in fewer advisory tasks for ICES and lower contributions from the Recipients of Advice. The current threat category of this risk is consistent with the 20% CRF level.

Events after the balance sheet date

The ICES–EU MoU for 2016 was signed 1 March 2016.

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Accounting policies

The Final Accounts have been prepared in accordance with Rule 18 of the Rules of Procedures.

The Final Accounts have been presented applying the accounting policies consistently with last year.

Recognition and measurement

Assets are recognised in the balance sheet when future economic benefits are probable and the value of the asset can be measured reliably.

Liabilities are recognised in the balance sheet when it is probable that economic benefits will flow out of the Organisation and when the value of the liability can be measured reliably.

In recognising and measuring assets and liabilities, any gains, losses and risks occurring prior to the presentation of the Final Accounts that evidence conditions existing at balance sheet date are taken into account.

Income statement

Contributions and Costs

Contributions are booked as revenue in the financial year to which they relate. Equally, costs incurred to generate the earnings of the year are recognised in the income statement.

Financial income and expenses

Financial income and expenses comprise interest income and expenses. Realised gains and losses on bonds classified as investments are recognised in the financial year to which they relate. Unrealised gains and losses on bonds classified as investments are recognised directly on equity.

Projects funded by third parties

Revenue from projects funded by third parties is recognised as income at the same time as costs related to the project are incurred as expenses.

Profit or loss on projects funded by third parties is recognised in the income statement when the project is finalised.

https://doi.org/10.17895/ices.pub.22303573

Accounting policies

Balance sheet

Non-current assets

Non-current assets comprise investments and cash at bank dedicated to Capital Reserve Fund.

Investments

Investments comprising listed bonds are measured at fair value at the balance sheet date, however, at a maximum price of 100, corresponding to the redemption price. Gains and losses on investments from the Capital Reserve Fund and General Fund are recorded in the associated equity accounts. All other gains and losses are recorded in the income statement, except for unrealised fair value adjustments of investments, which are recognised directly on equity.

Receivables

Receivables are measured at cost. Provisions are made for bad debts.

Unpaid contributions from projects funded by third parties (assets)

Unpaid contributions from ongoing projects comprise costs related to work performed on projects during which funding is not yet received from third party.

Unpaid contributions are measured at cost.

Prepayments from projects funded by third parties (liabilities)

Prepayments from projects funded by third parties comprise funds received from third parties regarding projects, which are not finished at the end of the year.

Prepayments from projects funded by third parties are recognised as funds received from third parties.

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Income statement for 2015

	Notes	2015 DKK	2014 DKK'000
Contributions from member countries	1	21.935.000	21.935
Contribution from Faeroe Island and Greenland		410.000	410
Recipients of Scientific Advice	2	15.026.677	14.978
Income from Projects		2.631.014	2.745
Other income	3	2.983.430	1.897
Sales of publications		2.970	16
Total revenue		**42.989.091**	**41.981**
Salaries	4	-32.286.018	-32.492
Office expenses		-1.216.940	-1.490
IT expenses		-3.076.809	-3.049
Expenses for Council and ASC		-2.212.002	-1.082
Travelling and meeting expenses		-4.538.016	-5.291
Publications		-250.338	-543
Total expenditure		**-43.580.123**	**-43.947**
Result of revenue and expenditure		**-591.032**	**-1.966**
Financial income	5	92.001	163
Financial expenses	6	-76.241	-13
Income over expenditure		**-575.272**	**-1.816**

The years income over expenditure is distributed as follows

Capital Reserve Fund (equity)	115.292	0
Use of fund "Strategic Investment Fund (equity)	-505.000	-500
Accumulated income over expenditure (equity)	-185.564	-1.316
Total	**-575.272**	**-1.816**

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Balance sheet at 31 December 2015

	Notes	2015 DKK	2014 DKK'000
Capital Reserve Fund – Investment & cash at bank	10	8.475.150	8.381
Non-current assets		**8.475.150**	**8.381**
Receivable member contribution	7	10.868.000	13.374
Other receivables	8	4.557.186	4.920
Prepayments and accrued income	9	393.746	802
Receivables		**15.818.932**	**19.096**
Investments	10	**22.349.554**	**13.428**
Cash at bank and in hand		**2.147.424**	**9.571**
Current assets		**40.315.910**	**42.095**
Assets		**48.791.060**	**50.476**

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Balance sheet at 31 December 2015

	Notes	2015 DKK	2014 DKK'000
Capital Reserve Fund (CRF)		8.597.818	8.401
Strategic Investment Fund (SIF)		95.130	600
Accumulated income over expenditure		14.795.859	15.037
Equity	11	**23.488.807**	**24.038**
Prepaid/pre-invoiced contributions		22.363.000	21.935
Prepaid projects funded by third parties		2.460.321	623
Other payables	12	471.123	833
Short term dept		7.809	3.047
Total short-term liabilities		**25.302.253**	**26.438**
Equity and liabilities		**48.791.060**	**50.476**

Additional information		
Lease of IT equipment	13	

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Notes

	2015 DKK	2014 DKK'000
1. Contributions from member countries (shares)		
Belgium (2)	820.000	820
Canada (3)	1.230.000	1.230
Denmark (3)	1.230.000	1.230
Estonia (1)	410.000	410
Finland (1,5)	615.000	615
France (4)	1.640.000	1.640
Germany (4)	1.640.000	1.640
Iceland (3)	1.230.000	1.230
Ireland (2)	820.000	820
Latvia (1)	410.000	410
Lithuania (1)	410.000	410
The Netherlands (3)	1.230.000	1.230
Norway (4)	1.640.000	1.640
Poland (3)	1.230.000	1.230
Portugal (2)	820.000	820
Russia (3)	1.230.000	1.230
Spain (3)	1.230.000	1.230
Sweden (3)	1.230.000	1.230
United Kingdom (4)	1.640.000	1.640
The USA (3)	1.230.000	1.230
	21.935.000	**21.935**
2. Recipients of Scientific Advice		
European Commission	10.446.660	10.402
NEAFC	2.340.361	2.328
OSPAR	1.169.165	1.239
HELCOM	534.750	476
NASCO	535.741	533
	15.026.677	**14.978**
3. Other income		
Income from ICES Journal	1.468.909	859
Income from Training courses	446.751	545
ASC Fees	688.460	444
Miscellaneous	84.745	49
Special request	294.565	0
	2.983.430	**1.897**

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Notes

	2015 DKK	2014 DKK'000
4. Salaries		
Salaries are divided as follows:		
Salaries Secretariat	29.276.555	30.229
Other salaries relating costs	413.467	382
	29.690.022	**30.611**
Honorarium to external Chairs	2.595.996	1.881
	32.286.018	**32.492**
5. Financial income		
Interest	87.308	147
Exchange gains	4.693	16
	92.001	**163**
6. Financial expenses		
Exchange losses	-22.459	-2
Bank charges	-53.782	-11
	-76.241	**-13**

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Notes

	2015 DKK	2014 DKK'000
7. Receivable member contributions		
Belgium	0	254
Related to previous or current year	**0**	**254**
Belgium	836.000	1.640
Denmark	1.254.000	1.230
France	1.672.000	1.640
Estonia	418.000	410
Iceland	836.000	0
Ireland	0	820
Norway	0	1.640
The Netherlands	0	1.230
Poland	1.254.000	1.230
Portugal	836.000	820
Russia	1.254.000	1.230
Sweden	1.254.000	0
Spain	1.254.000	1.230
Related to the following year	**10.868.000**	**13.120**
	10.868.000	**13.374**
8. Other Receivables		
European Commission	3.860.121	3.602
VAT due from the Ministry of Foreign Affairs	412.078	1.185
Deposits due from parking spaces	7.940	0
Miscellaneous receivables	277.047	133
	4.557.186	**4.920**
9. Prepayments and accrued income		
Prepaid pensions	393.746	752
Accrued interest from investments	0	50
	393.746	**802**

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Notes

10. Investments

General investment and Capital Reserve Funds are invested in Danish short-term bonds listed on the Copenhagen Stock Exchange.

11. Equity

	Capital Reserve Fund DKK	Strategic Investment Fund DKK	Accumulated income over Expenditure etc. DKK	Total equity DKK
Equity at 1 January 2015	8.400.909	600.130	15.036.674	24.037.713
Unrealised fair value of bonds	81.617	0	-55.251	26.366
Profit/loss for the year	115.292	-505.000	-185.564	-575.272
Equity at 31 December 2015	**8.597.818**	**95.130**	**14.795.859**	**23.488.807**

	2015 DKK	2014 DKK'000
12. Other Payables		
Accounts payable	382.833	785
Danish State Pension (ATP)	88.290	48
	471.123	**833**
13. Lease commitments		
Lease obligations falling due within:		
0-1 years	1.190.782	1.026
1-5 years	2.106.441	2.818
> 5 years	0	0
	3.297.223	**3.844**

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International Council for the Exploration of the Sea

Audit book comments on the Final Accounts 2015

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Contents

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Audit book comments on the Final Accounts for 2015

1. Our audit of the Final Accounts

1.1 Final Accounts

We have finalised our audit of the Final Accounts of International Council for the Exploration of the Sea for 2015 presented by the General Secretary and the Finance Committee. The Final Accounts show the following:

	2015 TDKK	2014 TDKK
Income over expenditure (minus is deficit)	-575	-1.816
Assets	48.791	50.476
Equity	23.489	24.038

1.2 Affairs and conditions materially influencing the evaluation of the Final Accounts

Based on our audit, we point out the following particular affairs and conditions of relevance for Management's evaluation of the Final Accounts:

1.2.1 Segregation of duties

As mentioned in our audit book comments of 8 July 2013 issued upon acceptance of the audit, the possibility of preventing material misstatements in the Final Accounts, including misstatements caused by fraud, primarily depends on the extent to which sound internal control is ensured in the organisation of the recording systems and business processes.

We draw attention to the size of ICESs administration and limited resources. Smaller administrations increase the risk of misstatements in the Final Accounts as a result of intentional or unintentional actions or omissions. Any misstatements in the Final Accounts that result from fraud may not necessarily be detected during our audit since misstatement of this nature are usually concealed or hidden.

We point out that these comments should not be taken to mean that our audit revealed specific matters that could indicate irregularities or fraud, but they are intended to emphasise that segregation of duties is usually a material element in the internal control. We also point out that during our audit we did not find any misstatements caused by fraud.

1.2.2. Inquiries of the Executive Board and the Board of Directors about the risk of fraud

We have made inquiries of the General Secretary and the Chairman of the Finance Committee about the Organisation's risk of fraud as well as the internal controls implemented by the Finance Committee

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to mitigate such risk. They have informed us that the Finance Committee and the General Secretary do not have any knowledge of actual, presumed or alleged fraud and that no particular risk of material misstatement is estimated to exist in the Organisation's Final Accounts as a result of fraudulent financial reporting or misappropriation of organisation assets. We should point out that, during our audit, we did not identify any misstatements in the Final Accounts caused by fraud.

2. Comments on the Final Accounts

2.1 Income statement

The individual items of the income statement have been reviewed and analysed based on specifications, vouchers and other reconciliation records prepared by ICES. We have taken a number of test samples, made analyses and reconciliations to verify the reliability of the registrations.

We have checked that contributions from member countries are recognized in accordance with agreed amounts at ICES Council. A total of 21,935k have been recognized as income, according to agreement, and has not given rise to any comments.

Recipients of Scientific Advice are recognized in accordance with memorandum of understanding (MoU) between ICES and the donor. A sample of contracts have been reviewed and has not given rise to any comments.

The audit of the income statement did not give rise to any comments.

We have examined costs, and checked against invoices, contracts or other basis. We have compared salary costs to contracts and general agreement.

The audit of other costs did not give rise to any comments.

2.2 Balance sheet

The 31 December 2015 the Capital Reserve Fund amounts to 8,598 TDKK, corresponding to 20% of total income.

We have compared ICES' investments to confirmation from the bank, which not give rise to comment.

We have made unannounced cash count on 1st of April 2016. The audit did not give rise to any comments.

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When auditing cash and cash equivalents we obtained lists of accounts from the organisation's bankers, and we checked the cash at bank as of 31 December.

We have analyzed or reconciled receivables with supporting documentation for 15,819 TDKK recognized in the Final Accounts. The receivables consist primarily of member contribution (10.868 TDKK) and other receivables (4.557 TDKK)

The individual items of the income statement have been reviewed and analysed based on specifications and decisions from the Council, regarding contributions from member countries.

Liabilities have been reconciled to contracts; agreements etc. and consist primarily of pre-invoiced member contributions for the following year.

The audit of the balance sheet did not give rise to any comments.

3. Other comments

3.1 Letter of representation and unadjusted misstatements in the Final Accounts

As part of our audit of complex areas, the General Secretary has issued a letter of representation to us on the Final Accounts for 2015.

The audit did not give rise to any comments, and no misstatements were found during the audit.

3.2 Insurance

Our audit did not include insurance taken out by the Organisation. We recommend that the Organisation's insurance cover be reviewed with the insurance organisation or insurance broker at least once a year in order to assess the cover taken out etc., including whether the cover provided by the insurance taken out is adequate, and whether the Organisation may need to take out insurance in special areas.

In connection with the closing of accounts, we asked the General Secretary to confirm that the insurance taken out is considered adequate in view of the Organisation's circumstances to cover potential loss or damage arising in the Organisation.

3.3 General IT controls

We have not reviewed the Organisation's general IT controls as any weaknesses or inadequacies therein will not in our view cause the Final Accounts to be materially misstated. We recommend that the Organisation assess whether its back-up procedures are appropriate to ensure restoration of the books of account, if lost.

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4. Conclusion

If the Finance Committee approves the Final Accounts 2015 in its present form, we will provide the Final Accounts with an unqualified auditor's report without emphasis of matter.

5. Objective and scope of the audit, including definition of responsibilities

Our audit book comments of 19 May 2011 issued upon acceptance of our appointment as auditors contain a description of the objective, scope and performance of our audit, our reporting as well as a definition of the responsibilities of Management and auditors. Please refer to those audit book comments. We recommend that a copy thereof be handed out to any new members of the Finance Commitee.

Our audit did not include the General Secretary's review. However, we read the General Secretary's review to ensure that the disclosures in this report are consistent with the financial statements and with the information that came to our knowledge during our audit. Having read the General Secretary's review, we are to issue a statement on whether or not the General Secretary's review is consistent with the Final Accounts. Our statement on the General Secretary's review has to be placed immediately after our auditor's opinion on the Final Accounts.

6. Auditor's declaration

Pursuant to Danish law, we declare that we comply with the legal requirements of independence and that we have received all the information requested during our audit.

Copenhagen, 28 May 2016

Deloitte
Statsautoriseret Revisionspartnerselskab

Peter Z. Skanborg
State Authorised Public Accountant

Presented at the Finance Committee' meeting on 28 May 2016

https://doi.org/10.17895/ices.pub.22303573

Finance Committee

Piotr Margonski
Chair

Alain Vezina

Fritz Köster

Ari Leskelä

Tomas Zolubas

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Finance Committee

Report

Chair: Piotr Margonski

In attendance: Piotr Margonski, Alain Vezina (by web conference), Ari Leskelä, Fritz Köster, Tomas Zolubas, Anne Christine Brusendorff, Helle Falck, Kirsten Gudmandsen, Ellen Johannesen. In the afternoon: Cornelius Hammer and Adi Kellermann.

1 Approval of Agenda

The meeting approved the agenda (**FC_2016-06 Doc 1**).

2 Final Accounts 2015, Audit book comments on the Final Accounts 2015, and report

(FC_2016-06 Doc 02)

The Final Accounts 2015 have been audited by Deloitte. The members of the Finance Committee reviewed, approved, and signed the Final Accounts 2015 and the Audit book comments on the Final Accounts 2015.

3 Status Report as of 30 April 2016

The General Secretary reviewed **FC_2016-06 Doc 03** and the status of the working budget as of 30 April 2016 of the Secretariat and provided clarifications on some of the updated budget lines. Finance Committee **took note**.

4 Proposed Budget for 2017 and Forecast Budget for 2018

4.1 Proposed Budget 2017

The General Secretary introduced the proposed budget 2017, noting changes in budget lines based on 2015 Council decisions (e.g. the honorarium for the SCICOM Chair, a small increase in office expenses, for required meeting room maintenance) and noting some projections are contingent on securing the 2% increase during the July e-voting procedure. (E.g. limited Secretariat participation in 2017 ASC).

The proposed budget for 2017 was not voted on by Council in October 2015. The Forecast budget 2017 as presented in **FC_2016-06 Doc 4.1** has been calculated assuming the 2% increase is secured. In case of 0% increase, some activities will be reduced potentially impacting development of e.g. IT infrastructure.

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4.2 Forecast budget 2018

The 2018 budget is calculated on the assumption that a 2% increase in national contribution is secured for 2017. If not, additional savings will have to be found for 2018. Regarding Secretariat salaries it was noted that recent Danish discussions may have implications for a required increase greater than the usual 2%. The Secretariat Finance Department will investigate this further.

For the 2018 Forecast Budget, Finance Committee recommends a 2% increase, with a fall-back option of no (0%) increase to be prepared for Council, but again stressing the financial implications of a stable budget, and that rough projections indicate that significant deficits can be expected as early as 2019 without additional projects, new MoU developments or increased national contributions (**FC_2016-06 Doc 4.2**).

4.3 Programme/departmental Budgets for 2016-2018

The General Secretary presented the Programme budgets document (**FC_2016-06 Doc 4.3)** noting that the income division between departments outlined are not exact calculations but rough calculations intended to provide an indication of how income and cost are allocated to the different ICES programmes.

The importance of the foundation of science for advice, was noted, highlighting the potential inadequacy of the current practice of 100% cost recovery of direct costs for advice.

The Programme budgets document was first produced as part of the Council Working Group on ICES Business Model (CWGIBM) and aims to understand if the direct costs for advice are being covered by the largest value MoU. The information contained could also be used to show how the cost recovery is developing over time. The new data presented, shows that the aim of full cost recovery for advice is closer to being realized. Reviewing the costs this way is important for analysing further investment in the Data Center, and will also be important information for Science review.

The document could also help provide information on how the Secretariat could prioritise differently. However, comparison between departments is difficult. It was suggested that presenting this information overtime would be helpful.

4.4 Overview of on-going external projects and external projects in the pipeline.

The meeting took note of current and planned ICES project participation, as described in **FC_2016-06 Doc 4.4** specifically noting the absence of H2020 projects in the pipeline.

5 Development of the Capital Reserve Fund (CRF)

The meeting took note of the development of the CRF as outlined in FC_2016-06 Doc 5.

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5.1 Capital Reserve Fund

At the 2015 Council meeting it was agreed:

The appropriate level of the Capital Reserve Fund (CRF) should be reviewed by Finance Committee in 2016. The level of the CRF should match the risk management strategy, and the investment behaviour of the organization should be reviewed to make sure this proposal is properly grounded. FC will report their recommendations to the June Bureau.

Based on the scenarios presented in **FC_2016-06 Doc 5.1**, Finance Committee discussed the implications of raising the CRF from 20% to 30% of income. Given the implications for equity, increasing the CRF to 30% will negatively impact the liquidity of the organization, it will also limit the ability of ICES to invest this equity into future needs, and is not a strategic position from which to further negotiation for a 2% increase in national contributions, and therefore this is not recommended.

Finance Committee recommend: That the CRF remain at 20% of income.

6 Development of the Strategic Investment Fund (SIF)

Finance Committee took note that the SIF has now been exhausted **FC_2015-05 Doc 06**. 19 million has been invested, with very few funds remaining, the remaining amount will be transferred to equity.

7 Strategic Financial Issues

At the 2015 Council meeting it was decided that Finance Committee should take ownership of the ICES Business Model (IBM)[1], follow the issues, and update as necessary. As noted in section 4 above, the programme budgets document will be updated annually.

7.1.1 Longer-term strategy for achieving increases of National Contributions

Finance Committee was requested to consider options for either annual or other periodical increases with the aim to achieve a longer term strategy for securing increases of National Contributions.

Scenarios were prepared as outlined **FC_2016-06 Doc 7.1.1.** The scenario of annual 2% increases in national contributions provides the best result financially.

During the discussion the following points were noted:

The General Secretary visits to Member Countries have been a positive experience, and many opportunities to discuss with countries, about finances as well as other issues. However, the expected outcome for the July e-voting on the 2017 forecast budget is still unclear.

1 https://community.ices.dk/Committees/Council/2015_Meeting_Docs/Meeting_Documents/CM_2015_Del-3.1_CWGIBM.pdf

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Given the varying needs of Member Countries, it may not be possible to identify one strategy that is agreeable to all.

For some countries the longer-term planning perspective is important, while for others the annual 2% increase would be seen as preferable, and for some it would be preferred to request an increase from time to time.

Agreeing a budget that would be locked in for a longer time period (e.g. 5 years) could also be dangerous both politically, as well as the risk in fixing the budget based on changing inflation rates.

An alternative could be to negotiate with Countries individually, but this poses a risk to the way the organization operates and moves away from the current share system. Finance Committee did not support the idea of different rates of increase for different countries as this was considered being not equitable.

The current strategy to get cost covered from other international agreements (The Joint Norwegian-Russian Fisheries Commission), puts less pressure on pursuing costs from national contributions (then need to secure the 2% increase in national contributions).

Extra budgetary contributions from member countries could be a potential way to deal with the budgetary shortfalls.

The option to increase income by requesting payment for advice from member countries is not relevant for all (Canada and US).

Given the limited amount of equity remaining, future expected (2021) budget deficits will need to consider alternative means for meeting the shortfall.

Action: The Finance Committee conclude that it is unlikely to find a strategy for achieving increases in national contributions that is agreeable to all. ICES should continue to pursue the aim of 100% cost recovery. The potential and implications of extraordinary budgetary contributions should be further developed. Longer term planning perspective and equitable increases is the preferred approach. If the next few years result in stable contributions to national contributions other suboptimal strategies may need to be considered.

7.1.2 Development of Equity

The meeting is invited to review and comment on the development of equity.

The General Secretary reviewed and highlighted clarifications to the document **FC_2016-06 Doc 7.1.2**, emphasizing the two columns present the money allocated, and the realization of the use of these funds. Finance Committee **took note** of the remaining equity amount, noting that the remaining amount would not be sufficient to fund the proposals (under 8 below) and to compensate for potential budget deficits if national contributions are not increased, and/or if additional income is not secured (additional project income/new MoUs).

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8 SCICOM leadership, Science Fund, and SCICOM Strategic Initiatives, 2017, and beyond

Council approved a new Science Fund for the years 2014-2015, with a maximum amount of 500,000 DKK/year financed out of SIF. The fund was continued in 2016, financed from equity, and with 300.000 DKK earmarked for demonstration advice. Furthermore, Council in 2014, and 2015 agreed to use funds from equity for SCICOM strategic activities in 2015, and 2016, and specifically to support the joint ICES/PICES early Career Scientist Conference in 2017.

In 2015, Council agreed to strengthen the SCICOM leadership by the use of the equivalent of approximately 60% of a P5, I position.

SCICOM submitted proposals in **FC_2016-06 Doc 08** for:

- strengthening the SCICOM leadership, and the plan to use the available 550.000 DKK (approximately 60% of a P5, I position), to be financed from the ICES core budget.

- other SCICOM investments strategic activities, including a Science fund as deemed appropriate, outlining which activities are requested to be funded from equity.

The Finance Committee consider these proposals, and their financial sustainability over the long-term both with the impact on the core budget, and equity.

Finance Committee recommend:

The proposal for use of the money from the Core budget to support science leadership (550,000 DKK) for supporting the SSG Chairs and for a WGChairs meeting for Science expert groups. SCICOM is requested to prepare an annual work plan and framework administrative guidelines for the use of the money for review by Bureau and Council.

Regarding the requested money from equity, (slide 2) Finance Committee note that given the development of Equity, there is not sufficient funds available to support the Science Fund in 2017 or the longer term.

More information is needed on the request for funds for the Early Career Scientists Conference, but the requested amount is available, as are funds (350.000,- DKK over the next three years) for the Strategic initiatives, Action areas, and interaction with existing scientific partners (PICES/CIESM).

8.1 ICES Strategic Plan 2014–2018 Midway report and Vision document

The Coordination Group submitted a proposal for the use of funds from equity to support areas where further investment is needed to reach the goals laid out in ICES Strategic Plan. Investment was requested in three areas: training, data and information, and the Arctic and aquaculture.

Finance Committee Recommend: These are all important areas, however, given the development of equity and projected risk of future budget deficits, a maximum of 1, 000, 000 DKK should be used. Coordination Group is requested to provide more detailed information on the proposals for investment. Bureau should discuss the priority based on this refined information.

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ICES CIEM International Council for the Exploration of the Sea Conseil International pour l'Exploration de la Mer

Finance Committee

June 2016

Doc 3

Status Report as of 30 April 2016 (FC 2016-06 Doc 3)

The final Budget for 2016 was approved by Council by e-voting in 2015. It is the working budget for the Secretariat in 2016. Important activities that result in income and expenditures such as the Annual Science Conference (ASC), Training Programme, Travel and meetings, and project hours are still to come, and a precise prognosis is difficult to make at this stage.

Comments to the Status of Accounts:

1) Income from the European Union is expected to be 10,400,000 DKK in accordance with the signed MoU. The invoice for the first semester will be issued in July.
2) Project income for the period January–April is approximately DKK 523,000 based on time recording for on-going projects. The revised project budget income for the whole year 2,786,419 DKK is considered realistic (Cf. Doc 8 Info on External Projects). This figure includes overhead. In addition, based on earlier years, it is anticipated that DKK 311,000 will come from DG ENV special requests.
3) Income from Eurofish represents 10% of certain office expenses.
4) Use of equity:

By e-voting Council in July 2014 approved:

- Investment in the development of the Regional Fisheries Database.

By e-voting July/August 2015 Council approved:

- Investments in IT tools (Content Administration for Reports and Advice/CARA, SharePoint update, and Resource Coordination Tool/RCT)
  Support for training courses, and development of on-line course components

The 2015 Council meeting approved investment in:

- The 2016 Science Fund and SCICOM Strategic Initiatives
- ICES/EFARO initiative on Surveys,
- Website development/implement reactive design
- pilot process of dedicated Secretariat staff to optimize assessment work
- Funds to support the Internal/External review of ICES Science (travel), and Funds to support Leadership/structural changes of Science (travel)

https://doi.org/10.17895/ices.pub.22303573

	Realized Jan - Apr	Budget 2016 Approved Council	Budget 2016 Revised
INCOME			
National Contribution	22.363.000	22.363.000	22.363.000
Faroe Islands & Greenland	418.000	418.000	418.000
National Contribution	22.781.000	22.781.000	22.781.000
Income from Commissions	3.732.722	15.525.000	15.016.235
Other Income	1.308.032	6.130.000	5.361.419
TOTAL INCOME	27.821.754	44.436.000	43.158.654
EXPENSES			
Salaries	10.744.591	32.680.000	34.055.454
Office Expenses	506.804	2.206.000	1.940.000
IT Expenses	797.087	2.910.000	3.015.000
Expenses for ASC	81.192	1.295.000	1.080.000
Travel and meetings	-17.949	4.650.000	5.560.000
Publications	216.515	895.000	906.200
TOTAL EXPENSES	12.328.239	44.636.000	46.556.654
Operating Result	15.493.515	-200.000	-3.398.000
Interest	26.969	-200.000	-100.000
Transfer from Equity	0	0	-3.298.000
Result	15.466.546	0	0

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	Realized Jan - Apr	Budget 2016 Approved Council	Budget 2016 Revised
National Contribution	22.363.000	22.363.000	22.363.000
Faroe Islands & Greenland	418.000	418.000	418.000
National Contribution	22.781.000	22.781.000	22.781.000
NEAFC Contribution (Advice)	2.352.063	2.435.000	2.356.743
OSPAR Contribution (Advice and Data)	292.279	1.260.000	1.250.000
HELCOM Contribution (Data)	238.781	470.000	470.000
NASCO Contribution (Advice)	538.420	560.000	539.492
Special requests	311.180		
EC Contribution (Advice)		10.800.000	10.400.000
Income from Commissions	3.732.722	15.525.000	15.016.235
Project income - hours incl. overhead	523.195	1.320.000	2.786.419
Project income - Projects in Pipeline	0	2.265.000	
ASC income	3.396	490.000	490.000
Income from ICES Journal	509.588	970.000	1.000.000
Sale of Publications		5.000	5.000
Income Eurofish	76.934	200.000	200.000
Income Training courses	193.948	860.000	860.000
Miscellaneous income	970	20.000	20.000
Other Income	1.308.032	6.130.000	5.361.419
TOTAL INCOME	**27.821.754**	**44.436.000**	**43.158.654**
Salaries - Management and Administration	1.274.531	5.210.000	5.021.565
Salaries - Communications	165.641	1.120.000	509.185
Salaries - Advisory Programme	2.526.899	8.050.000	7.676.858
Salaries - Science Programme	1.437.099	3.960.000	4.330.727
Salaries - Publications	650.549	1.350.000	1.997.952
Salaries - IT	566.444	1.800.000	1.717.990
Salaries - Data Centre	3.126.259	8.500.000	9.553.416
Salaries - Total	9.747.422	29.990.000	30.807.692
Fees for External Consultants	503	250.000	250.000
Overtime for Gen. Staff	1.675	15.000	15.000
Social activities Cond. /Cond.	6.525	75.000	65.000
Education, Training, Team building	77.474	225.000	190.000
Honorarium ACOM Chair and Vice Chairs	723.296	1.555.000	2.169.053
Honorarium SCICOM Chair	146.292	455.000	438.709
ATP Pensions ICES 2/3 share	41.405	115.000	120.000
Salaries	10.744.591	32.680.000	34.055.454
Electricity	89.294	180.000	131.000
Heating	61.058	250.000	235.000
Safety and Security	70.306	200.000	190.000
Cleaning	38.518	190.000	166.000
Stationery	5.173	20.000	31.000
Photocopy and Printer paper		15.000	5.000
Paper (Letterhead, envelopes etc.)	438	25.000	1.000
Postage	-2.891	150.000	99.000

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	Realized Jan - Apr	Budget 2016 Approved Council	Budget 2016 Revised
Telephone, Fax, Etc	12.818	71.000	63.000
Office Equipment (Workplace furniture)	12.130	100.000	111.000
Insurance	183.611	245.000	287.000
Miscellaneous Expenses	19.355	160.000	120.000
Office Maintenance	1.131	90.000	81.000
Facility improvements	2.498	300.000	233.000
Library: Books, Subscribtions	10.330	30.000	30.000
Public Relations (Including souvenir shop)	3.036	60.000	47.000
Accounting and Auditing		100.000	90.000
Legal Assistance		20.000	20.000
Office Expenses	506.804	2.206.000	1.940.000
Leasing Contracts	294.781	972.000	972.000
Hardware Support Contracts	122.276	483.000	483.000
Software Support Contracts	113.664	248.000	248.000
Software License Contracts	3.830	408.000	408.000
Hardware non-contract	50.099	260.000	260.000
Software non-contract	3.323	130.000	130.000
Outsourcing		0	0
Remote/cloud services	32.559	80.000	80.000
Communication	115.955	200.000	200.000
Domains/certificates	45	8.000	8.000
IT-investments		0	0
Consultancies	45.430	55.000	160.000
Other costs	15.125	66.000	66.000
IT Expenses	797.087	2.910.000	3.015.000
General Expenses: Transport, Handbooks, Gifts	18.902	400.000	300.000
Travel: Secretariat Staff and Chairs	62.290	565.000	450.000
Host Country Share	0	160.000	160.000
Enhance Science/Keynote Speakers	0	60.000	60.000
Promotion for Young Scientists	0	110.000	110.000
Expenses for ASC	81.192	1.295.000	1.080.000
Statutory meeting	0	30.000	15.000
President, Bureau + sub Groups	123.877	340.000	320.000
Secretariat travel per Cost Center	120.898	685.000	685.000
External reviewing of assessments/benchmarking	151.876	400.000	400.000
Travel costs for RAC	0	60.000	60.000
ACOM travel and meeting costs	14.471	300.000	300.000
ACOM Chairs and vice chairs travel	131.634	400.000	400.000
Advice Drafting Groups travel	117.927	910.000	1.100.000
SCICOM travel and meeting costs	209.984	420.000	400.000
ICES co-sponsored Symposia (per Symposia)	-1.028.581	225.000	150.000
Young scientist confeence	0		
SCICOM strategic activities	29.417		150.000
Science Fund	0		200.000
Demonstration advice			300.000
Internal/external review of ICES Science Travel			50.000
Leadership/structural changes of Science Travel			50.000
Training support for DG MAREs officials	0	100.000	100.000
Course income/expenses	110.548	780.000	880.000
Travel and meetings	-17.949	4.650.000	5.560.000

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	Realized Jan - Apr	Budget 2016 Approved Council	Budget 2016 Revised
ICES Marine science Symposia	0	160.000	160.000
Publications general	0	40.000	70.000
ICES Annual Report	5.991	100.000	80.000
ICES Cooperative Research Reports	30.394	95.000	80.000
ICES Leaflets for Plankton and Diseases	6.335	30.000	5.200
ICES Times	10.000	30.000	11.000
ICES Newsletters	0	80.000	0
ICES Advice Publications	0	10.000	0
Editor in Chief ICES JMS reimbursement of expenses	0	100.000	0
ICES Communications	163.795	250.000	500.000
Publications	216.515	895.000	906.200
TOTAL EXPENSES	**12.328.239**	**44.636.000**	**46.556.654**
Operating Result	**15.493.515**	**-200.000**	**-3.398.000**
Interest	26.969	-200.000	-100.000
Transfer from Equity		0	-3.298.000
Result	**15.466.546**	**0**	**0**
Transferred from Equity:			
Young Scientists Conference			
Data Quality/timeliness/RDB			-300.000
Website development			-300.000
ACOM assessments workload issue (1.275.000)			-1.275.000
Internal/external review of ICES Science			-50.000
Leadership/structural changes of Science			-50.000
SCICOM strategic activities			-150.000
Science Fund & Demonstration Advice			-500.000
IT Specialist			-105.000
Training courses			-100.000
CARA/RCT Salary			-210.000
Regional database			-258.000

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Proposed Budget for 2017 and Forecast Budget for 2018

The **Proposed Budget 2017 has not yet been decided**. The updates presented below named **Proposed Budget 2017 are made with both a 2% and a 0% increase**

Following the outcome of the electronic vote in June-August the approved version of the proposed 2017 budget will be sent to Contracting Parties in August 2015 with the invoice for the annual contributions 2017. (The contributions are to be paid between July 22, 2016 and January 31, 2017, cf. Rule 19 i).

The updated **Proposed Budget 2017 will be** distributed to Member Countries one month before the Council meeting in October 2016 for final approval, except for the national contributions, which will be decided during the electronic vote.

The **Forecast Budget for 2018** was prepared by the Secretariat and is submitted to the Finance Committee (FC) for review. The **2018 Forecast Budget** has been elaborated with a 2% inflation increase and it is recommended to be presented to Council in October 2016. After discussion and approval by the FC, this budget will be forwarded to the Bureau (June) for approval and will then be sent to Contracting Parties one month before Council. Council will approve the national contributions 2018 based on the **Forecast Budget 2018** in October 2016.

For the Forecast Budget 2018 Finance Committee is asked to discuss and approve the proposal to increase national contributions by 2%.

In the case that the 2% increase of national contributions for 2018 is not approved, this will further complicate the situation, and put a strain on the budget, with a need to identify reduced activities equivalent to 490.500 DKK

Comments to the Budget:

National Contributions:

The Member Countries decided in April 2015 that National Contributions for 2016 should increase with 1.9% in relation to 2015. The Proposed Budget for national contributions in 2017 has been increased with both 0% and 2%, and the Forecast budget 2018 bas been increased with 2% based on 2017 figures with an 2% increase.

Income from Commissions:

Expected income in 2017–2018 from the European Union has not been increased with expected inflation, with the assumption that the MoU will continue in 2017 and 2018 with the same amount.

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Expected income in 2017–2018 from NASCO and NEAFC has been increased with the expected inflation of 2.86 % for 2017 and unchanged for 2018.

Expected income in 2017–2018 from OSPAR is demand driven for Advice and for Data based on a fixed amount increased with inflation. The budgets for 2017–2018 reflect the projection made by OSPAR in cooperation with ICES.

For 2017 and 2018 income of 840,000, 844,500 DKK, respectively has been projected based on negotiations with Norway to establish a MoU for the advice delivered.

Other Income:

Pay back from projects (hours x hourly rate) reflects the expected amount to be charged to on-going projects, including overhead, with the actual knowledge for approved projects. With the actual knowledge about approved projects it is difficult to predict the precise amount for 2017 and 2018.

Expected income from ICES Journal of Marine Science in 2018 has been increased to 1,600,000 DKK based on budget received from Oxford University Press.

Income from Eurofish represents cost recovery of approximately 10% of some office expenses.

Salaries:

For 2017 and 2018, respectively salaries have increased with the expected inflation rate of 0.5% plus the annual within grade step increase, according to the staff rules. In addition, there is an increase in honorarium from 42% to 100%, beginning in 2017 for the SCICOM Chair.

Salaries within the Advisory Programme as well as ACOM Honoraria are to be recovered from the MoUs with Recipients of Advice.

Office Expenses:

The overall budget has in 2017 been slightly increased in order to cater for the maintenance needs, partly stemming from the cuts in 2014. Reallocations between budget lines will be applied where necessary.

IT Expenses:

The overall budget has been maintained more or less on the same level. Reallocations between budget lines will be applied where necessary.

It should be noted that a major item represents long-term leasing contracts for the purchase of hardware, mainly servers.

Expenses for ASC:

In February 2015 Latvia confirmed their readiness to host the 2016 ASC in Riga. At the 2014 Council meeting USA (2017), Germany (2018) and Sweden (2019) confirmed their willingness to look into their possibility to host future ASC, and to report back as soon as possible. In the meantime USA has officially confirmed their hosting.

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Travel and Meeting expenses:

Travel and meeting costs for advice related expenses are to be recovered from the MoUs with Recipients of Advice.

The budget line includes also the 550,000 DKK given to SCICOM to strengthen the science leadership.

Publication and Communication:

The overall budget has been maintained on the same level. Reallocations between budget lines will be applied where necessary.

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	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
National Contribution	22.791.000	22.791.000	22.363.000	23.272.500
Faroe Islands & Greenland	426.000	426.000	418.000	435.000
National Contribution	23.217.000	23.217.000	22.781.000	23.707.500
NEAFC Contribution (Advice)	2.400.000	2.356.743	2.356.743	2.424.000
OSPAR Contribution (Advice and Data)	1.190.000	1.250.000	1.250.000	1.200.000
HELCOM Contribution (Data)	470.000	470.000	470.000	470.000
NASCO Contribution (Advice)	550.000	539.492	539.492	555.000
Special requests	250.000	250.000	250.000	250.000
EC Contribution (Advice)	10.400.000	10.400.000	10.400.000	10.400.000
MoU Norway	0	840.000	840.000	844.500
Income from Commissions	15.260.000	16.106.235	16.106.235	16.143.500
Project income - hours incl. overhead	3.007.953	2.880.650	2.880.650	2.697.000
Project income - Projects in Pipeline	1.074.400	0	0	0
ASC income	490.000	490.000	490.000	490.000
Income from ICES Journal	1.000.000	1.400.000	1.400.000	1.600.000
Sale of Publications	5.000	5.000	5.000	5.000
Income Eurofish	200.000	200.000	200.000	200.000
Income Training courses	700.000	860.000	860.000	700.000
Miscellaneous income	20.000	20.000	20.000	20.000
Other Income	6.497.353	5.855.650	5.855.650	5.712.000
TOTAL INCOME	**44.974.353**	**45.178.885**	**44.742.885**	**45.563.000**
Salaries - Management and Adm. (incl. project assistant in 2017)	6.731.227	5.200.000	5.200.000	5.261.000

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	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
Salaries - Communications	540.000	529.500	529.500	578.000
Salaries - Advisory Programme	6.770.125	8.071.000	8.071.000	8.227.000
Salaries - Science Programme	4.600.000	3.535.000	3.535.000	3.835.000
Salaries - Publications	1.700.000	1.772.000	1.772.000	1.835.600
Salaries - IT	1.800.000	1.800.000	1.800.000	1.915.741
Salaries - Data Centre	8.400.000	9.624.000	9.624.000	9.709.000
Salaries - Total	30.541.353	30.531.500	30.531.500	31.361.340
Fees for External Consultants	250.000	250.000	250.000	250.000
Overtime for Gen. Staff	15.000	15.000	15.000	15.000
Social activities Cond. /Cond.	65.000	65.000	65.000	65.000
Education, Training, Team building	200.000	200.000	200.000	200.000
Honorarium ACOM Chair and Vice Chairs	2.200.000	2.200.000	2.200.000	2.324.000
Honorarium SCICOM Chair	455.000	1.063.500	1.063.500	1.128.200
ATP Pensions ICES 2/3 share	115.000	115.000	115.000	115.000
Salaries	33.841.353	34.440.000	34.440.000	35.458.541
Electricity	132.000	132.000	132.000	165.000
Heating	236.000	236.000	236.000	236.000
Safety and Security	191.000	191.000	191.000	191.000
Cleaning	167.000	167.000	167.000	167.000
Stationery	31.000	31.000	31.000	31.000
Photocopy and Printer paper	5.000	5.000	5.000	5.000
Paper (Letterhead, envelopes etc.)	2.000	2.000	2.000	2.000
Postage	100.000	100.000	100.000	100.000
Telephone, Fax, Etc	63.000	0	0	0

https://doi.org/10.17895/ices.pub.22303573

	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
Office Equipment (Workplace furniture)	112.000	112.000	112.000	112.000
Insurance	288.000	288.000	288.000	288.000
Miscellaneous Expenses	121.000	121.000	121.000	121.000
Office Maintenance	81.000	273.000	221.885	101.259
Facility improvements	223.000	223.000	223.000	10.400
Library: Books, Subscribtions	30.000	30.000	30.000	30.000
Public Relations (Including souvenir shop)	47.000	47.000	47.000	47.000
Accounting and Auditing	91.000	91.000	91.000	91.000
Legal Assistance	20.000	20.000	20.000	20.000
Office Expenses	1.940.000	2.069.000	2.017.885	1.717.659
Leasing Contracts	1.010.000	1.010.000	1.010.000	1.095.000
Hardware Support Contracts	470.000	470.000	470.000	342.600
Software Support Contracts	334.000	334.000	334.000	333.000
Software License Contracts	453.000	453.000	453.000	412.000
Hardware non-contract	189.000	189.000	189.000	185.000
Software non-contract	58.000	58.000	58.000	52.000
Outsourcing	0	0	0	0
Remote/cloud services	80.000	80.000	80.000	112.600
Communication	161.000	161.000	161.000	239.000
Domains/certificates	8.000	8.000	8.000	8.000
IT-investments	0	192.600	0	0
Consultancies	50.000	50.000	50.000	50.000
Other costs	80.000	80.000	80.000	72.600
IT Expenses	2.893.000	3.085.600	2.893.000	2.901.800

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	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
General Expenses: Transport, Handbooks, Gifts	300.000	300.000	300.000	300.000
Travel: Secretariat Staff and Chairs	450.000	642.285	450.000	450.000
Host Country Share	160.000	160.000	160.000	160.000
Enhance Science/Keynote Speakers	50.000	50.000	50.000	60.000
Promotion for Young Scientists	110.000	110.000	110.000	110.000
Expenses for ASC	1.070.000	1.262.285	1.070.000	1.080.000
Statutory meeting	15.000	15.000	15.000	15.000
President, Bureau + sub Groups	320.000	320.000	320.000	320.000
Secretariat travel per Cost Center	685.000	685.000	685.000	685.000
External reviewing of assessments/benchmarking	500.000	500.000	500.000	500.000
Travel costs for RAC	60.000	60.000	60.000	60.000
ACOM travel and meeting costs	300.000	300.000	300.000	300.000
ACOM Chairs and vice chairs travel	480.000	480.000	480.000	480.000
Advice Drafting Groups travel	1.100.000	1.100.000	1.100.000	1.100.000
SCICOM travel and meeting costs	400.000	400.000	400.000	400.000
Strenghtening the Science Leadership (travel)		550.000	550.000	550.000
ICES co-sponsored Symposia (per Symposia)	75.000	150.000	150.000	75.000
Young scientist conference	450.000	450.000	450.000	0
SCICOM strategic activities *[awaiting SCICOM input]*	0	0	0	0
Science Fund *[awaiting SCICOM input]*	0	0	0	0
Training support for DG MAREs officials	100.000	100.000	100.000	100.000
Course income/expenses	620.000	620.000	620.000	620.000
Travel and meetings	5.105.000	5.730.000	5.730.000	5.205.000
ICES Marine science Symposia	160.000	160.000	160.000	160.000

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	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
Publications general	80.000	80.000	80.000	130.000
ICES Annual Report	80.000	80.000	80.000	80.000
ICES Cooperative Research Reports	82.000	82.000	82.000	82.000
ICES Leaflets for Plankton and Diseases	21.000	21.000	21.000	11.000
ICES Times	12.000	12.000	12.000	12.000
ICES Newsletters	40.000	40.000	40.000	0
ICES Advice Publications	0	0	0	0
Editor in Chief ICES JMS reimbursement of expenses	0	0	0	0
ICES Communications	200.000	200.000	200.000	200.000
Publications	675.000	675.000	675.000	675.000
TOTAL EXPENSES	**45.524.353**	**47.261.885**	**46.825.885**	**47.038.000**
Operating Result	**-550.000**	-2.083.000	-2.083.000	**-1.454.741**
Interest	-100.000	-100.000	-100.000	-200.000
Transfer from Equity	-450.000	-1.983.000	-1.983.000	-1.275.000
Result	**0**	**0**	**0**	**0**
Transferred from Equity:				
Regional database		-258.000	-258.000	
Young Scientists Conference	-450.000	-450.000	-450.000	

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	Forecast Budget 2017 (CM 2015 DEL-3.4)	Revised Budget 2017 with 2% increase	Revised Budget 2017 with 0% increase	Forecast Budget 2018 with 2% increase
Assessments workload issue - data and advice (1.275.000 - salary and relocation/two P2_I's in Secretariat) Allocated 5.100.622		-1.275.000	-1.275.000	-1.275.000

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Programme Budgets

This document aims to provide a detailed analysis of how ICES resources are allocated to current activities and programmes. The tables and figures below give an oversight of how income and cost are allocated to the different ICES programmes.

The Advisory Programme through income from Recipients of Advice is expected to contribute with a cost recovery of 100% of the direct cost. The Advisory Programme in 2015 provided 32% of the indirect cost. The Advice programme consists of 12.6 out of 42.5 secretariat staff members which are not part of the general cost or equivalent to 28%. This contribution to the general cost is expected to decline in the budget period 2016–2018 mainly due to budget restraints in EU.

Following the 2015 Finance Committee the table below:

- specifies the income from the MoU with EU, related to salaries under the appropriate department in the Secretariat (specifically an income adjustment between the Data Centre and the Advisory Department);

- specifies the income from the MoU with EU, related to IT services and infrastructure under the appropriate department in the Secretariat (specifically an income adjustment between the IT Department, "general income", and the Advisory Department

Similar adjustments have not been made in the ensuing excel files.

Table below for 2015 realized figures

	Direct income	*Direct + MoU Income divided for attribution to relevant department (approximate figures)*	*Direct cost*	*Net balance general costs*	*Cost recovery of direct cost % (calculated on income divided by department)*
Advice	*14,251,401*	*10,624,165*	*12,399,418*	*-1,775,253*	*86*
Science	*1,999,899*		*8,618,331*	*-6,618,432*	*23*
Publications	*1,471,879*		*2,534,371*	*-1,062,492*	*58*

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Data Centre	*2,836,166*	*4,019,493*	*8,993,874*	*-4,974,381*	*45*
IT	*0*	*761,099*	*4,759,324*	*-4,759,324*	16
General income	*22,617,297*	*24,300,107*	*0*	*22,617,297*	
General cost	*0*		6,462,357	*-6,462,357*	
Interest	*0*		*0*	*15,761*	
Total	*43,176,642*		*43,767,675*	*-575,272*	

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	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST
	2015	**2015**	**2016**	**2016**	**2017 2%**	**2017 2%**	**2017 0%**	**2017 0%**	**2018**	**2018**
ADVISORY PROGRAMME										
Contribution from NEAFC	2.340.361		2.356.743		2.356.743		2.356.743		2.424.000	
Contribution from OSPAR (Advice)	607.966		643.000		643.000		643.000		612.000	
Contribution from HELCOM (Advice)	0		0		0		0		0	
Contribution from NASCO	535.741		539.492		539.492		539.492		555.000	
Contribution from EC	10.446.660		10.400.000		10.400.000		10.400.000		10.400.000	
Income from Projects	320.673		100.000		195.000		195000		195.000	
Special requests					250.000		250000		250.000	
Norway MoU					840.000		840.000		844.500	
Direct Advisory income	**14.251.401**		**14.039.235**		**15.224.235**		**15.224.235**		**15.280.500**	
Secretariat travel for advice		269.385		390.000		390.000		390.000		390.000
External reviewing of Assessment		433.069		400.000		500.000		500.000		500.000
Travel cost for RAC				60.000		60.000		60.000		60.000
ACOM TRAVEL		293.434		300.000		300.000		300.000		300.000
ACOM Chairs and vice chairs Travel		427.249		400.000		480.000		480.000		480.000
Advice drafting Groups Travel		1.237.551		1.100.000		1.100.000		1.100.000		1.100.000
ICES Advice Publications		0		0		0				0
Training support to DG MARE's officials				100.000		100.000		100.000		100.000
Budgeted salaries		7.288.515		7.676.858		8.071.000		8.071.000		8.227.000
ACOM Chair and vice-chairs honorarium		2.158.972		2.169.053		2.200.000		2.200.000		2.324.000
Demonstration advice				300.000						
External Contracts		291.243		250.000		250.000		250.000		250.000
Direct advisory cost		**12.399.418**		**13.145.911**		**13.451.000**		**13.451.000**		**13.731.000**
Staff		12		14		14		14		12
Staff as % of non general staff		28%		33%		32%		32%		33%
Share of General cost		1.824.666		2.531.982		2.556.484		2.540.317		2.553.739
Total Advisory cost		**14.224.084**		**15.677.893**		**16.007.483**		**15.991.317**		**16.284.739**
% Cost recovery		100%		90%		95%				94%
% of ICES income		33		33		34				34
% of ICES expenditure		32		34		34				35
Input from Equity			637.500		637.500		637.500		637.500	
SCIENCE PROGRAMME										
Income from Projects	864.688		1.483.209		1.751.000		1.751.000		1.579.000	
Income Training courses	446.751		860.000		860.000		860.000		700.000	
ASC Income (Fees)	688.460		490.000		490.000		490.000		490.000	
Direct Science income	**1.999.899**		**2.833.209**		**3.101.000**		**3.101.000**		**2.769.000**	
ASC General expenses		1.998.387		300.000		300.000		300.000		300.000
Secreatariat travel		77.165		100.000		100.000		100.000		100.000
Travel ASC		46.722		450.000		642.285		450.000		450.000
ASC Keynote Speakers		56.195		60.000		50.000		50.000		60.000

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	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST
	2015	**2015**	**2016**	**2016**	**2017 2%**	**2017 2%**	**2017 0%**	**2017 0%**	**2018**	**2018**
Host Country of ASC Fee				160.000		160.000		160.000		160.000
Young Scientists at ASC		110.698		110.000		110.000		110.000		110.000
Symposia		158.679		150.000		150.000		150.000		75.000
SCICOM travel and meeting		227.121		400.000		400.000		400.000		400.000
Strenghtening Science Leadership travel						550.000		550.000		550.000
Training Programme		323.138		880.000		620.000		620.000		620.000
Science Fund		500.000		200.000						
SCICOM strategic initiatives		219.230		150.000						
Young Scientist Conference		0				450.000		450.000		0
Internal/External review of ICES Science travel				50.000						
Leadership/structural changes of Science Travel				50.000						
Budgeted Salaries		4.463.972		4.330.727		3.535.000		3.535.000		3.835.000
Chair of SCICOM		437.024		438.709		1.063.500		1.063.500		1.128.200
Direct Science cost		**8.618.331**		**7.829.436**		**8.130.785**		**7.938.500**		**7.788.200**
Staff		8		7		7		7		7
Staff as % of non-general staff		19%		16%		15%		15%		18%
Share of General cost		1.216.444		1.222.336		1.203.051		1.195.443		1.389.534
Total Science cost		**9.834.775**		**9.051.772**		**9.333.836**		**9.133.944**		**9.177.734**
% Cost recovery		20%		31%		33%				30%
% of ICES income		5		7		7				6
% of ICES expenditure		22		19		20				20
Input from Equity	505.000		850.000		450.000		450.000			
PUBLICATIONS AND COMMUNICATIONS										
Income from *ICES Journal of Marine Science*	1.468.909		1.000.000		1.400.000		1400000		1.600.000	
Sale of Publications	2.970		5.000		5.000		5000		5.000	
Direct publication and communication income	**1.471.879**		**1.005.000**		**1.405.000**		**1.405.000**		**1.605.000**	
Library		27.952		30.000		30.000		30.000		30.000
ICES Marine Science Symposia Publications		0		160.000		160.000		160.000		160.000
Publications general		26.258		70.000		80.000		80.000		130.000
ICES Annual Report		66.763		80.000		80.000		80.000		80.000
ICES Cooperative Research Reports		20.625		80.000		82.000		82.000		82.000
ICES Leaflets for Plankton and Diseases		5.798		5.200		21.000		21.000		11.000
ICES TIMES		10.050		11.000		12.000		12.000		12.000
ICES Newsletters INSIGHT				0		40.000		40.000		0
ICES Communications		120.844		500.000		200.000		200.000		200.000
Secretariat travel		601		18.000		18.000		18.000		18.000
Editor in Chief ICES JMS		0		0		0				0

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	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST
	2015	**2015**	**2016**	**2016**	**2017 2%**	**2017 2%**	**2017 0%**	**2017 0%**	**2018**	**2018**
Budgeted Salaries		2.255.480		2.507.137		2.301.501		2.301.501		2.413.599
Total Publication and communication cost		**2.534.371**		**3.461.337**		**3.024.501**		**3.024.501**		**3.136.599**
Staff		6		5		5		5		5
Staff as % of non-general staff		13%		11%		12%		12%		12%
Share of General cost		836.305		873.097		939.884		933.940		938.875
Total Publication cost		**3.370.676**		**4.334.434**		**3.964.385**		**3.958.441**		**4.075.474**
% Cost recovery		44%		33		46				51
% of ICES income		3		2		3				4
% of ICES expenditure		8		9		**8**				9
Input from Equity			300.000							
DATA CENTRE										
Contribution from OSPAR	561.199		607.000		607.000		607.000		588.000	
Contribution from HELCOM	534.750		470.000		470.000		470.000		470.000	
Income from Projects	1.740.217		1.203.210		934.650		934.650		923.000	
Direct Data Centre income	**2.836.166**		**2.280.210**		**2.011.650**		**2.011.650**		**1.981.000**	
Secretariat travel		93.081		63.000		63.000		63.000		63.000
Budgeted salaries		8.900.793		9.553.416		9.624.000		9.624.000		9.709.000
Total Data Centre cost		**8.993.874**		**9.616.416**		**9.687.000**		**9.687.000**		**9.772.000**
Staff		15		16		16		16		14
Staff as % of non - general staff		35%		36%		37%		37%		34%
Share of General cost		2.280.832		2.793.911		3.007.628		2.988.608		2.628.849
Total Data Centre cost		**11.274.706**		**12.410.327**		**12.694.628**		**12.675.608**		**12.400.849**
% cost recovery		25%		18%		16%				16%
% of ICES income		7		5		4				4
% of ICES expenditure		26		27		27				26
Input from Equity			1.405.500		895.500		895.500		637.500	
IT INFRASTRUCTURE										
Direct income IT	**0**		**0**		**0**				**0**	
Hardware Leasing		1.178.525		972.000		1.010.000		1.010.000		1.095.000
Software licenses, external support contracts		1.205.532		1.139.000		1.257.000		1.257.000		1.087.600
Purchase of soft and hardware		249.603		390.000		247.000		247.000		237.000
Consultancies		122.407		160.000		50.000		50.000		50.000
Various expense		320.741		354.000		329.000		329.000		432.200
IT-investment				0		192.600				0
Budgeted salaries		1.682.516		1.717.990		1.800.000		1.800.000		1.915.741
Total IT cost		**4.759.324**		**4.732.990**		**4.885.600**		**4.693.000**		**4.817.541**
Staff		3		3		3		3		3
Staff as % of non-general staff		5%		4%		5%		5%		5%
Share of General cost		304.111		349.239		375.953		373.576		375.550
Total IT cost		**5.063.435**		**5.082.228**		**5.261.553**		**5.066.576**		**5.193.091**
Cost recovery		0,00%		0,00%		0,00%		0,00%		0,00%

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	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST	INCOME	COST
	2015	**2015**	**2016**	**2016**	**2017 2%**	**2017 2%**	**2017 0%**	**2017 0%**	**2018**	**2018**
% of ICES income		0		0		0		0		0
% of ICES expenditure		12		11		11		11		11
Input from Equity	70.272		105.000							
SECRETARIAT, COUNCIL, BUREAU										
National contributions	21.935.000		22.363.000		22.791.000		22.363.000		23.272.500	
Faroe and Greenland	410.000		418.000		426.000		418.000		435.000	
Income Eurofish	187.552		200.000		200.000		200.000		200.000	
Miscellaneous income	84.745		20.000		20.000		20.000		20.000	
Income from projects										
Total general income	**22.617.297**		**23.001.000**		**23.437.000**		**23.001.000**		**23.927.500**	
Office expenses		1.376.540		1.910.000		2.039.000		1.987.885		1.687.659
Statutory meeting		3.420		15.000		15.000		15.000		15.000
Travel Bur., Pres,		191.230		320.000		320.000		320.000		320.000
Secretariat travel		83.663		114.000		114.000		114.000		114.000
General direct cost		**1.654.853**		**2.359.000**		**2.488.000**		**2.436.885**		**2.136.659**
Budgeted salaries		4.394.037		5.021.565		5.200.000		5.200.000		5.261.000
Overtime (all programs)		106.079		15.000		15.000		15.000		15.000
Education and training (all)		190.208		255.000		265.000		265.000		265.000
Danish state pension (all)		117.180		120.000		115.000		115.000		115.000
Total general cost		**6.462.357**		**7.770.565**		**8.083.000**		**8.031.885**		**7.792.659**
% of ICES income		52		53		52		51		53
% of ICES expenditure		15		17		17		17		17

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ICES CIEM
International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Finance Committee

June 2016

Doc 4.4

Agenda Item 4.4

Overview of on-going external projects and projects in the pipeline

Finance Committee is invited to take note of current and planned ICES project participation.

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ESTIMATED PROJECT INCOME 2016, 2017, 2018

		Project	Updated Estimate (15.05.2016)	Est. Personnel & Overhead Costs 2017	Est. Personnel & Overhead Costs 2018
Hours Dependent Projects		2016-ETC ICM	468.000	523.000	523.000
		2024-COFASP	80.000	52.000	
		2032-MAREFRAME	73.000	30.000	
		2033-AORAC	715.000	715.000	715.000
		2034-AtlantOS	450.000	400.000	400.000
		2035-COLUMBUS	100.000	134.000	44.000
		2036-BlueBridge	500.000	800.000	800.000
		2038-TaPaS	11.650	11.650	
		2039-ClimeFish	100.000	195.000	195.000
		SeaChange	15.209	Subcontract	Subcontract
Lump Sum		2028-EMODnet Chemistry II	30.000		
		2030-EMODnet Biology II	50.000		
		3037-Baltic Boost	193.560	0	
		Data Ingestion			
		TOTAL	**2.786.419**	**2.860.650**	**2.677.000**

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PROJECTS STARTING 2017				
Project Name	**Project Period**	**ICES Stakeholders**	**Max Lifetime Grant**	**Est. Hours per year**
Data ingestion Neil/Hjalte *(Ingestion and safe-keeping of marine data)*	2017-2019	Supporting VLIZ as EMODNet Biology coordinator	750.000 - 900.000 + overhead (46%)	

PROJECTS WITH NO ELIGIBLE COSTS				
Project Name	**Project Period**	**ICES Stakeholders**	**Max Lifetime Grant**	**Est. Hours per year**
COST Machine learning (*Machine learning and intelligent systems for the marine sciences)*	Late 2016 - 2020	SCICOM ('Big Data'/'Machine learning) EWGs Training courses	none	ICES would plan to contribute from its working time ca. 200 hours per year to this project

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PIPELINE PROJECTS

Project Name	Project Period	ICES Stakeholders	Max Lifetime Grant	Est. Yearly Hours
Sea Data Cloud		Neil, Hjalte/Hans		
EMODNET Benthic Survey – planning meeting Sept 2016	Call for tender to be launched Feb 2017	Seb		
IEA Interreg proposal		Neil, Mark, possibly Comms team	75% of eligible costs (with overheads max 84%)	
Second Cycle – DGENV Implementation of the Second Cycle of the Marine Strategy Framework Directive: achieving coherent, coordinated and consistent updates of the determinations of Good Environmental Status, initial assessments and environmental targets http://ec.europa.eu/environment/funding/msfd_2016.htm		Mark		

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Capital Reserve Fund

The Capital Reserve Fund (CRF) was established in the early 1970s to balance short-term liquidity matters, to meet budgetary appropriations and unforeseen, or other authorised, purposes. According to a 2010 Council decision its size is targeted to be 20% of **total income.** The development of the CRF is presented in the table below.

By the end of 2015, the CRF was at 8,597,818 DKK and invested in Danish short-term bonds listed on the Copenhagen Stock Exchange.

Development of the CRF Fund:

Date	CRF	% of Salaries	% of Natl Contrib. and MoU	% of/Total Income
31-Dec-00	2,014,176	12%	9%	7%
31-Dec-01	2,049,523	12%	9%	7%
31-Dec-02	2,094,547	12%	9%	8%
31-Dec-03	2,544,466	13%	11%	9%
31-Dec-04	2,644,505	14%	10%	9%
31-Dec-05	3,128,999	17%	12%	10%
31-Dec-06	3,783,990	20%	14%	11%
31-Dec-07	3,891,756	19%	13%	11%
31-Dec-08	5,358,686	25%	17%	15%
31-Dec-09	5,815,970	26%	18%	16%
31-Dec-10	7,992,824	36%	25%	20%
31-Dec-11	8,181,711	32%	23%	20%
31-Dec-12	8,410,096	30%	23%	20%
31-Dec-13	5,392,023	17%	15%	13%[1]
31-Dec-14	8,400,909	26%	23%	20%
31-Dec-15	8,597,818	27%	23%	20%

[1] Due to late payment of national contributions, money was borrowed, with security in bonds in the Capital Reserve Fund (repo), in order to maintain normal operations. The money was repaid in March 2014. Thus the Capital Reserve Fund is now again at is obligatory level of 20% of the total income.

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Appropriate level of the Capital Reserve Fund (CRF)

At the 2015 Council meeting it was agreed:

The appropriate level of the Capital Reserve Fund (CRF) should be reviewed by Finance Committee in 2016. The level of the CRF should match the risk management strategy, and the investment behaviour of the organization should be reviewed to make sure this proposal is properly grounded. FC will report their recommendations to the June Bureau.

The Capital Reserve Fund (CRF) is defined (since 2010) as 20% of total income to ensure the payment of Secretariat salaries during loss of income in the eventuality that there is a default in payment of annual contributions by a Member Country, or one of the Recipients of Advice requesting scientific information and advice from ICES withdraws from the MoU.

In the table below the development of the CRF is projected, including a calculation of what percentage of Secretariat Salaries would be covered in a "worst case scenario" (i.e. assuming that (an average of) seven-months' salary costs would need to be paid out (as described in Rule 9 of the ICES Staff Rules) in the unlikely event that ICES should require to immediately cease all activities). Given the likelihood of the "worst case scenario" risk is very low, a change of the CRF level from 20% to 30% may be overly risk averse, requiring a further reserve of nearly 4 million DKK.

Background

In 1997, Council agreed that the ICES Capital Reserve Fund (CRF) should be linked to Total Income rather than Secretariat Salaries and that it should not be allowed to fall below its current level of about 7% of Total Income and preferably should be kept above 10% of Total Income; (Council 1997 Agenda 16).

In 2005, the Council unanimously adopted the Committee's proposal that the purpose of the CRF should be to provide short-term finance to meet budgetary appropriations and unforeseen, or other authorised, purposes. (Council 2005, endorsed).

In 2010, Council agreed to increase the CRF to 20% of total income. (Council 2010, Del-09.5).

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	Revised Budget 2017 with 2% increase	Forecast Budget 2018 with 2% increase	Forecast Budget 2019 with 2% increase	Forecast Budget 2020 with 2% increase	Forecast Budget 2021 with 2% increase
Income					
National Contribution	23,217,000	23,707,500	24,181,700	24,665,400	25,158,800
Income from Commissions	16,106,235	16,143,500	16,204,400	16,225,400	16,246,500
Other Income	5,855,650	5,712,000	4,815,000	4,815,000	4,815,000
TOTAL INCOME	**45,178,885**	**45,563,000**	**45,201,100**	**45,705,800**	**46,220,300**
Expenses					
Salaries	34,440,000	35,478,800	36,365,737	36,926,512	37,477,683
Office Expenses	2,069,000	1,697,400	1,940,000	1,940,000	1,940,000
IT Expenses	3,085,600	2,901,800	3,000,000	3,000,000	3,000,000
Expenses for ASC	1,262,285	1,080,000	1,070,000	1,070,000	1,070,000
Travel and meetings	5,730,000	5,205,000	5,205,000	5,205,000	5,205,000
Publications	675,000	675,000	675,000	675,000	675,000
TOTAL EXPENSES	**47,261,885**	**47,038,000**	**48,255,737**	**48,816,512**	**49,367,683**
Operating result	**-2,083,000**	**-1,475,000**	**-3,054,637**	**-3,110,712**	**-3,147,383**
Interest	-100,000	-200,000	-200,000	-200,000	-200,000
Transfer from Equity	-1,983,000	-1,275,000	-1,275,000	-1,275,000	0
Result	**0**	**0**	**-1,579,637**	**-1,635,712**	**-2,947,383**

Capital Reserve fund

20% of Total income	9,035,777	9,112,600	9,040,220	9,141,160	9,244,060
30% of Total income	13,553,666	13,668,900	13,560,330	13,711,740	13,866,090
Salaries for 7 months	20,090,000	20,695,967	21,213,347	21,540,466	21,861,982
Covered by CRF 20%	44.98	44.03	42.62	42.44	42.28
Covered by CRF 30%	67.46	66.05	63.92	63.66	63.43

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Strategic Investment Fund (SIF)

At the end of 2015, a total of 18,889,286 DKK had been allocated to the SIF and with the exception of DKK 95,130 the same amount has been committed by Council decisions (Table 1).

The ICES Science Fund 2014–2015 and the future

In 2014, DKK 500,000 has been used on the ICES Science Fund activities according to Table 1 and note 11 of the Final Accounts for 2014.

In October 2014 Council likewise decided to set aside DKK 500,000 for the ICES Science Fund.

The first and second rounds of proposals for the ICES Science Fund received a total of 21 proposals. The proposals were presented at the SCICOM SharePoint site and ranked by SCICOM using a ranking tool, grading the proposal from high (5) to low (1). A subgroup was formed which evaluated the proposals taking into consideration the ranking provided by SCICOM and made a shortlist for presentation at SCICOM Midterm meeting. SCICOM decided to fund eight projects in 2014, and seven projects in 2015. The projects vary in scope and timing, some will be completed during a short workshop, while some will be conducted over 12 months.

After reimbursement of the 2015 seven projects, there will be a remaining sum of DKK 95,130 left in the SIF.

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Table 1: SIF Projects decided by Council

		Used	Used	Used	Used	*Used*	*Used*	*Used*	*Used*	*Remaining*
Project	**Committed**	**2008**	**2009**	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	
Climate Change	600,000	-63,932	-83,996	-346,190	*-105,882*					
Young Fishermen	320,000	-49,571	-39,864	-45,708	*-50,128*	*-134,729***				
SAHFOS	1,700,000		-1,377,259		*-322,741*					
MARCOM +	2,200,000	-196,621	-599,982	-341,445	*-566,904*	*-495,049*				
Training Programme Reallocated from external advisory review and Young Fishermen	3,000,000		-275,800	-447,549	*-692,089**	*-519,609* *450,073*	*-414,895*			
SCICOM secretary	450,000		-150,000	-150,000	*-150,000*					
Support of the budget 2010	642,000			-642,000						
Baltic Commitment	100,000				*-100,000*					
SCICOM Strategic Initiatives	600,000			-174,381	*-392,466*	*-33,153*				
Early Career Symposium 2012	400,000					*-400,000*				
Advisory Transition	5,300,000	-1,450,200	-1,760,547	*-2,089,253*						
Advisory Review Reallocated to training programme	916,284				*-174,962*	*-425,978* *-315,344*				
SCICOM Chair & Travel	2,661,002		-697,503	*-708,102*	*-663,926*	*-591,472*				
Science fund								-500,000	*-505,000*	
Total	**18,889,286**	**-1,760,324**	**-4,984,9541**	***-4,944,628***	***-3,219,095***	***-2,465,260***	***-414,895***	***-500,000***	***-500,000***	***95,130***

** Of which DKK 124,058 is related to 2010.* *** Bureau decision February 2012 to discontinue the funding and return the residual amount to the Equity.*

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Finance Committee

June 2016

Doc 7.1.1

Agenda item 7.1.1

Longer term strategy for achieving increases of National Contributions

At the 2015 Council meeting it was decided that Finance Committee should take ownership of the ICES Business Model (IBM), follow the issues, and update as necessary.

Finance Committee is asked to look into options for either annual or other periodical increases with the aim to achieve a longer term strategy for securing increases of National Contributions.

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Table A.

2015 and 2016 national contributions

ICES Member Country	Number of shares	Payment 2015 DKK - 0% increase	Payment 2016 DKK with 1,9 % increase	1,9 % increase DKK
Belgium	2	820,000	836,000	16,000
Canada	3	1,230,000	1,254,000	24,000
Denmark	3	1,230,000	1,254,000	24,000
Estonia	1	410,000	418,000	8,000
Finland	1.5	615,000	627,000	12,000
France	4	1,640,000	1,672,000	32,000
Germany	4	1,640,000	1,672,000	32,000
Iceland	3	1,230,000	1,254,000	24,000
Ireland	2	820,000	836,000	16,000
Latvia	1	410,000	418,000	8,000
Lithuania	1	410,000	418,000	8,000
Netherlands	3	1,230,000	1,254,000	24,000
Norway	4	1,640,000	1,672,000	32,000
Poland	3	1,230,000	1,254,000	24,000
Portugal	2	820,000	836,000	16,000
Russia	3	1,230,000	1,254,000	24,000
Spain	3	1,230,000	1,254,000	24,000
Sweden	3	1,230,000	1,254,000	24,000
UK	4	1,640,000	1,672,000	32,000
USA	3	1,230,000	1,254,000	24,000
Total National Contribution	53.5	21,935,000	22,363,000	428,000
Faroe Islands & Greenland	1	410,000	418,000	8,000
Total	54.5	22,345,000	22,781,000	436,000

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Table B.

A 2 % increase annually in national contributions 2016-2021

Number of shares	1.9% 2016	Payment 2016 DKK with 1,9% increase	2% 2017	Payment 2017 DKK with 2% increase	2% 2018	Payment 2018 DKK with 2% increase	2% 2019	Payment 2019 DKK with 2% increase	2% 2020	Payment 2020 DKK with 2% increase	2% 2021	Payment 2021 DKK with 2% increase	Total increase 2016 - 2021 per share(s)	
1 share	8,000	418,000	8,360	426,360	8,527	434,887	8,698	443,585	8,872	452,457	9,049	461,506	**43,506**	
1,5 shares	12,000	627,000	12,540	639,540	12,791	652,331	13,047	665,377	13,308	678,685	13,574	692,259	**65,259**	
2 shares	16,000	836,000	16,720	852,720	17,054	869,774	17,395	887,170	17,743	904,913	18,098	923,012	**87,012**	
3 shares	24,000	1,254,000	25,080	1,279,080	25,582	1,304,662	26,093	1,330,755	26,615	1,357,370	27,147	1,384,517	**130,517**	
4 shares	32,000	1,672,000	33,440	1,705,440	34,109	1,739,549	34,791	1,774,340	35,487	1,809,827	36,197	1,846,023	**174,023**	
ICES budget Total 54,5 shares	436000	22,781,000	455,620	23,236,620	464,732	23,701,352	474,027	24,175,379	483,508	24,658,887	493,178	25,152,065	**2,371,065**	**Increase in ICES ICES budget 2016-2021**

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Table C.

A 5 % increase one year, within a five year timeframe

Number of shares	1.9 % 2016	Payment 2016 DKK with 1,9% increase	5% 2017	Payment 2017 DKK with 5% increase	0% 2018	Payment 2018 DKK with 0% increase	0% 2019	Payment 2019 DKK with 0% increase	0% 2020	Payment 2020 DKK with 0% increase	0% 2021	Payment 2021 DKK with 0% increase	Total increase 2016 - 2021 per share(s)	
1 share	8,000	418,000	20,900	438,900									**20,900**	
1,5 shares	12,000	627,000	31,350	658,350									**31,350**	
2 shares	16,000	836,000	41,800	877,800									**41,800**	
3 shares	24,000	1,254,000	62,700	1,316,700									**62,700**	
4 shares	32,000	1,672,000	83,600	1,755,600									**83,600**	
ICES budget Total 54,5 shares	436,000	22,781,000	1,139,050	23,920,050		23,920,050		23,920,050		23,920,050		23,920,050	**1,139,050**	**Increase in ICES ICES budget 2016-2021**

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Table D.

A 1 % increase annually, within a five year timeframe

Number of shares	1.9 % 2016	Payment 2016 DKK with 1,9% increase	1% 2017	Payment 2017 DKK with 1% increase	1% 2018	Payment 2018 DKK with 1% increase	1% 2019	Payment 2019 DKK with 1% increase	1% 2020	Payment 2020 DKK with 1% increase	1% 2021	Payment 2021 DKK with 1% increase	Total increase 2016 - 2021 per share(s)	
1 share	8,000	418,000	4,180	422,180	4,222	426,402	4,264	430,666	4,307	434,972	4,350	439,322	**21,322**	
1,5 shares	12,000	422,000	4,220	426,220	4,262	430,482	4,305	434,787	4,348	439,135	4,391	443,526	**21,526**	
2 shares	16,000	836,000	8,360	844,360	8,444	852,804	8,528	861,332	8,613	869,945	8,699	878,644	**42,644**	
3 shares	24,000	1,254,000	12,540	1,266,540	12,665	1,279,205	12,792	1,291,997	12,920	1,304,917	13,049	1,317,967	**63,967**	
4 shares	32,000	1,672,000	16,720	1,688,720	16,887	1,705,607	17,056	1,722,663	17,227	1,739,890	17,399	1,757,289	**85,289**	
ICES budget Total 54,5 shares	436,000	22,781,000	227,810	23,008,810	230,088	23,238,898	232,389	23,471,287	234,713	23,706,000	237,060	23,943,060	**1,162,060**	**Increase in ICES budget 2016-2021**

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Table E.

Actual and proposed increases in national contributions 2012-2016, including the deficit in the budget

		actual 2012	actual 2013	actual 2014	actual 2015	actual 2016	actual Total		Proposed 2012	Proposed 2013	Proposed 2014	Proposed 2015	Proposed 2016	Proposed Total		Diff.
Price for one share (DKK)		410,000	410,000	410,000	410,000	418,000			428,000	437,000	446,000	455,000	464,000			
Inflation		0.0%	0.0%	0.0%	0.0%	1.9%			2.0%	2.0%	2.0%	2.0%	2.0%			
no of shares:		53.5	53.5	53.5	53.5	53.5			53.5	53.5	53.5	53.5	53.5			
Belgium	2	820,000	820,000	820,000	820,000	836,000	4,116,000		856,000	874,000	892,000	910,000	928,000	4,460,000		-344,000
Canada	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Denmark	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Estonia	1	410,000	410,000	410,000	410,000	418,000	2,058,000		428,000	437,000	446,000	455,000	464,000	2,230,000		-172,000
Finland	1.5	615,000	615,000	615,000	615,000	627,000	3,087,000		642,000	655,500	669,000	682,500	696,000	3,345,000		-258,000
France	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	8,232,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	8,920,000		-688,000
Germany	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	8,232,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	8,920,000		-688,000
Iceland	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Ireland	2	820,000	820,000	820,000	820,000	836,000	4,116,000		856,000	874,000	892,000	910,000	928,000	4,460,000		-344,000
Latvia	1	410,000	410,000	410,000	410,000	418,000	2,058,000		428,000	437,000	446,000	455,000	464,000	2,230,000		-172,000
Lithuania	1	410,000	410,000	410,000	410,000	418,000	2,058,000		428,000	437,000	446,000	455,000	464,000	2,230,000		-172,000
Netherlands	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Norway	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	8,232,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	8,920,000		-688,000
Poland	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Portugal	2	820,000	820,000	820,000	820,000	836,000	4,116,000		856,000	874,000	892,000	910,000	928,000	4,460,000		-344,000
Russia	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Spain	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Sweden	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
United Kingdom	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	8,232,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	8,920,000		-688,000
USA	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	6,174,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	6,690,000		-516,000
Total National Contribution	**53.5**	**21,935,000**	**21,935,000**	**21,935,000**	**21,935,000**	**22,363,000**	**110,103,000**		**22,898,000**	**23,379,500**	**23,861,000**	**24,342,500**	**24,824,000**	**119,305,000**		**-9,202,000**
Faeroe Islands		328,000	328,000	328,000	328,000	334,400	1,646,400		335,000	342,000	349,000	356,000	371,200	1,753,200		-106,800
Greenland		82,000	82,000	82,000	82,000	83,600	411,600		83,000	85,000	87,000	89,000	92,800	436,800		-25,200
Total	**1**	**410,000**	**410,000**	**410,000**	**410,000**	**418,000**	**2,058,000**		**418,000**	**427,000**	**436,000**	**445,000**	**464,000**	**2,190,000**		**-132,000**
Total Contributions		**22,345,000**	**22,345,000**	**22,345,000**	**22,345,000**	**22,781,000**	**112,161,000**		**23,316,000**	**23,806,500**	**24,297,000**	**24,787,500**	**25,288,000**	**121,495,000**		**-9,334,000**

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Finance Committee

June 2016

Doc 7.1.2

Agenda item 7.1.2

Development of Equity

This document shows the status of equity, as of 31/12 2015, including an outlook on the amount remaining after accounting for funds allocated for use in 2016 and beyond (agreed at the 2015 October Council meeting)

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		Use of funds up until December 2015
Balance 1/1-2012		**16.880.245**
Eco-System Advisor	Council decision 2011	-429.861
Document Management System and Content Management System, 2012-2013. Allocated DKK 1.500.000	e-voting June/July 2012	-625.000
Unrealised fair value of bonds		347.511
Profit/Loss for the year		-56.817
Equity 31/12-2012		**16.116.078**
Equity 1/1-2013		**16.116.078**
Eco-System Advisor	Council decision 2011	-743.902
Profit/Loss for the year		-595.977
Document Management System and Content Management System, 2012-2013. Allocated DKK 1.500.000	e-voting June/July 2012	-875.000

The amount of money allocated from equity by Council

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Equity 31/12-2013		**13.901.199**	
Equity 1/1-2014		**13.901.199**	
Eco-System Advisor	Council decision 2011	-735.000	
CARA/RCT (IT infrastructure and tools, additional staff and external consultancy) Allocated DKK 1.028.500	e-voting July/August 2013	-938.500	
Unrealised fair value of bonds		148.267	
Equity 31/12-2014		**12.375.966**	
Equity 1/1-2015		**12.375.966**	
Unrealised fair value of bonds		-55.251	
Eco-System Advisor	Council decision 2011 P3	-185.564	
CARA/RCT (IT infrastructure and tools, additional staff and external consultancy) Allocated DKK 1.028.500	e-voting July/August 2013	-90.000	
Equity 31/12-2015			**14.890.989**

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SCICOM strategic activities	2015 October Council meeting	-267.000
Council minutes 2014: ECS Conference 2017		-450.000
Regional Fish database (RDB) Allocated DKK 860.000 (185000 coming from ICES EFARO Survey/RDB development)	e-voting August/September 2014	-352.500
CARA/RCT salary for additional resources	e-voting July/August 2015	-350.000
External specialist consulting	e-voting July/August 2015	-105.000
Training courses	e-voting July/August 2015	-100.000
Council minutes 2015		-6.650.000
Status of Equity - after use of allocated funds		**6.616.489**

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Finance Committee
June 2016
FC Document 8.1/Bureau Document 2009

ICES Strategic Plan 2014–2018
Midway report and Vision document

1 Vision document, how to further progress towards achievement of the goals set in the ISP, based on updated "gut-feeling" reports within Science, Data and Information, Advice and Secretariat

Based on the updated "gut-feeling" reports, the Coordination Group has identified three areas in need of additional support/expertise for realizing the goals set out in the ISP and the work in the Committees/Expert Network: Training programme, data and information products to support the ecosystem approach, as well as support for the development of Arctic and Aquaculture products.

Below are proposals for how to further develop work in these areas.

1.1 Vision

Based on recent developments three areas have been identified where further support to the Committees, and Expert Network from the Secretariat are required to ensure work across, science, data and advice:

1. The training programme
2. Data and information products for the ecosystem approach
3. Arctic and Aquaculture

1.1.1 The Training Programme

The Training Programme is an important component of ICES work, to develop scientific capacity within the network, ensure future qualified advisory experts, and to reach out, communicate, and involve IGOs/NGOs, stakeholders, and managers in ICES work.

The Training Programme is a great success, however, there is still work to be done to optimize the way the business model functions to ensure self-financing, but also at an operational level, to find a way to ensure that courses are able to fulfill minimum number of attendees to ensure the course can run as planned. Training needs are currently identified applying an *ad hoc* approach and the programme would benefit from a more strategic and systematic approach to assessing training needs and demand for courses. This must be balanced with the aim to offer courses in strategic areas (where demand may initially be lower). The vision of SCICOM/Training group is also of an online capability, to facilitate more equitable access given the geographical distribution of ICES membership, and limited resources generally. This takes dedicated human resources to effectively implement.

The operational training group, has been instrumental to the success of the Training Programme, however, given the annual meeting schedule, and recent

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experience of several course cancellations and difficulties in developing on-line courses, more dedicated support for the Training Programme may be helpful to ensure efficient working procedures and continued success for ICES in this training role.

Proposal

In addition to the Training and Conference Coordinator, Anna Davies (C5) currently responsible for both the ASC and the training courses, to invest, for a two year period, in a dedicated training person (potential secondment opportunity) who will help:

- establish and carry out a repeatable and resource efficient assessment of training needs (focused on member country needs, but also with input from strategic cooperation partners);

- facilitate the development and launch of on-line training courses;

- consider alternative training initiatives (Pd.D/Post.doc);

- explore options for accreditation of the ICES Training Programme.

1.1.2 Data and information products for the ecosystem approach

The demands for access to detailed fisheries and environmental data in support of ICES science and advice are increasing, both within more traditional areas of ICES work, and within the expansion areas identified in the ICES Strategic Plan (i.e. integrated ecosystem understanding, Human dimension).

The streamlining of ICES advisory products, including the development of Fisheries and Ecosystem Overviews are dependent on automated and quality assured data products. The need for consistency in products to advise on the fisheries/CFP and ecosystem/MSFD requires a degree of integration in approaches. ICES is likewise experiencing an increasing request for operational data products from ICES clients. Investments in developing ICES databases and processing of data are required to meet these needs. This will also allow for the development of a roadmap and audit to achieve the ecosystem approach within fisheries management.

Proposal

To invest, for a two year period, in two dedicated persons (potential secondment opportunity) who will, amongst other issues, help:

- review and refine the trawl survey DATRAS database, to:

- support the fisheries and ecosystem overviews including biodiversity related products such as the Large Fish and the Mean Maximum Length Indicators;
- develop abundance and biomass indices used for stock assessment to improve the data processing workload and ensure the use of quality assured products as the basis of the advice on fishing opportunities;

- assist in the further development of the Regional Fisheries Database (RDB-ICES), to ensure that the database supports the Member Countries in their submission of

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detailed data, including effort data for stock assessments, and the expert groups in their use of the data outputs;

- strategically plan, develop, and implement, with ICES network and cooperation partners, new data products focused on human activities spatial layers, related to the automated Ecosystem and Fisheries Overviews, and eventually the Aquaculture Overviews.

- facilitate a process to better integrate data input from science expert groups into operational products, in cooperation with the Data Centre, DIG, SSGIEOM and Expert groups. (SCICOM has suggested startup activities in 2016)

1.1.3 Arctic and Aquaculture, to support the development of an Ecosystem Overview and the Aquaculture Overviews

Work is proceeding within the areas of the Arctic and aquaculture, and there is a need to ensure that the secretariat can support the strengthened science leadership, and the advisory leadership to progress further work in these areas. For both areas it is important to look into information and knowledge needs for the development of specific products (e.g. the Ecosystem Overview for the Central Arctic Oceans and the Aquaculture Overviews). To ensure seamless integration of data inputs and products, this work must be linked to the ACOM/SCICOM Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM).

Developing these products in these priority areas is important to develop the required evidence base needed for ICES to deliver in areas where the capacity exists to support our Arctic and Aquaculture cooperation partners. Specifically for the Arctic this also relates back to the four recommendations by the Arctic Fisheries Working Group on how to further the work in the Arctic, building upon and harvesting from the extended geographical scope of the fisheries assessments, and ecological working groups, as well as addressing integrated ocean observation and data collection.

Proposal

To invest for a two year period in a person (potential secondment opportunity) that could help:

- find synergies and exploit opportunities to bring together the various Expert Working Groups working on Aquaculture and Arctic related issues (respectively), identifying potential products, deliverables, and data sources. ;

- link this to and assist in the development of the Ecosystem Overview for the Central Arctic Ocean, and the Aquaculture Overviews;

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Total anticipated costs

The total cost of the investment in four additional persons to help the expert network and the member countries in their work would amount to:

Priority Area	Salary scale	Costs for two years
Training	C4	670, 000 DKK
Data and overviews - RDB	C7	900, 000 DKK
Data and overviews - DATRAS, Spatial Data, and overviews	C7	900, 000 DKK
Arctic and Aquaculture	P1	1,100,000 DKK
Total salary cost, plus potential moving costs and allowances according to the ICES staff rules, as well as travel costs		3.800.000 DKK

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2 ICES Strategic Plan 2014 -2018 (draft) Midway Report

The current ICES Strategic Plan (ISP) runs until 2018. 2016 presents an opportunity to take stock and consider progress and gaps in reaching the goals laid out in the plan. Given the timeline of Council meetings, this review also highlights the need for a well-planned renewal process for the next strategic planning cycle. Given the need for coordination between pillars, Bureau discussed how the renewal process should be structured. The meeting discussed the need for a midway review of implementation of ICES Strategic Plan to be presented to the 2016 Council meeting. The aim should be to review the status of ISP implementation to highlight progress and identify gaps. .

At the June Bureau meeting it was decided: The Chair of SCICOM, Chair of ACOM, General Secretary, and Head of Data and Information will each create a two-page vision document describing what has been done (reflecting on if progress has been satisfactory, where effort has been spent compared to the stated priorities) to be reported at June Bureau. The format will be developed and coordinated within the coordination group. These reports will lead into/inform a discussion on the renewal of the ISP.

Suggested format

1. Working across pillars on all areas of ICES work including priority issues (text description of "biggest wins"/and those within reach with agreed further steps)

2. Reflections on "what's left to do"? Are these still among the priorities, and reasons for not accomplishing?

3. Ideas for new priorities and specific issues to be accomplished within each pillar to achieve this common goal

4. Updated gut feeling reports.

3 Working towards integration across ICES pillars:

It is important to avoid a listing of separate processes/products, and to ensure a description on integrated processes, or plans to make this into integrated processes.

Including substantive and processes and tools to facilitate the process.

Start with a description of how organizational change has facilitated substantive development (RCT, Coordination Group).

Benchmarking process/ knowledge transfer from SCICOM to ACOM

3.1 Integrated Ecosystem understanding

- Integrated Ecosystem Assessments

- Ecosystem overviews (Including, abrasion maps, VMEs and other automated products).

- On-going work on Fisheries overviews (landings/yearly, landing/metier, Fmsy, MSYBtrigger)

- demonstration advice on trade-offs

-integrated advice, including multispecies and mixed fisheries considerations

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3.2 The Arctic

- ICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean

- Discussions on an Arctic Ecosystem overview

- Theme session P Arctic Ecosystem Services: Challenges and Opportunities (Co-sponsored by AMAP, EU-PolarNet, and ICES)

- demonstration advice on knowledge gathering in the Arctic and potential impacts in the Arctic of alien species from ships' ballast water

- IROC

- AMAP

3.3 Aquaculture

- advice in 2014, 2015, and 2016 on aquaculture and environmental interactions

- WGAQUA

- demonstration advice on aquaculture

-Aquaculture dialogue meeting

- Aquaculture Overviews

3.4 Human Dimension

SIHD

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4 Updated "gut-feeling" reports

4.1 Science

The section includes expert evaluations of the SCICOM Steering Group Chairs:

- Graham Pierce, SSG Ecosystem Processes and Dynamics (SSGEPD)
- Henn Ojaveer, SSG Ecosystem Pressures and Impacts (SSGEPI)
- Dave Reid, SSG Integrated Assessments of Ecosystems (SSGIEA) – not available but will be filled in shortly
- Nils Olav Handegaard, SSG Integrated Monitoring and Observation (SSGIEOM)

Summary

The gut feeling exercise was introduced in 2014 to give a brief overview of the status of the implementation of the Science Priorities under the Science Implementation Plan that support ICES Strategic Plan (2014-2018)

The revisited evaluation 2016 is to show the midways status of implementation.

The scale of scoring the implementation was established as follows.

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

The results of the evaluation is shown in the table below. The expert evaluation of 24 priority areas (the 7 prioritiy areas of SSGIEA are not evaluated yet) shows increased scores in 12 areas (marked in green in the table below). Priorities areas scoring some progress to doing well (3-5) are 18 (24) and 10 (24) areas are scoring 4-5.

The evaluation is considered to be conservative and the progress is in fact more extensive. This is due to that the priority areas are assigned to a specific SSG. A more extensive mapping of the implementation started in 2015 by initiative of SCICOM is to be updated and in this evaluation the crosscutting effects which will be clearer and give a fuller picture of the implementation of the Priority Areas.

SSGEPD	Priority area	2014	2016	Comments

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Describe and quantify the state of North Atlantic Ocean regional systems	1. Assess the physical, chemical and biological state of regional seas and investigate the predominant climatic, hydrological and biological features and processes that characterise regional ecosystems	3	4	In general I think we are making good progress, especially through groups like WGBIODIV and BEWG. Topics like climate change and indicators are well covered.
	2. Quantify the nature and degree of connectivity and separation between regional ecosystems	1	1	Arguably some relevant information is collected but I don't see anyone focusing on it
Understand and forecast the impact of climate variability and change on marine ecosystems	3. Quantify the different effects of climate change on regional ecosystems and develop species and habitat vulnerability assessments for key species	3	4	
	4. Understand the influence of climate impacts across a range of temporal and spatial scales, from local to global and from seasonal to multidecadal and identify indicators of climate driven biotic responses and forecast trajectories of change	3	4	
Resolve and quantify ecological processes in marine ecosystems, including modelling the dynamics of food webs and their responses to environmental change	5. Quantify the role of structural and functional diversity in marine ecosystems in providing stability and resilience	1	3	For some of the more basic knowledge on structure and function coverage is more patchy but arguably significant. This is also true of work on ecosystem services although only one group focuses on ES
	6. Investigate linear and nonlinear ecological responses to change, the impacts of these changes on ecosystem structure and function and their role in causing recruitment and stock variability, depletion and recovery.	3	3	
	7. Develop end to end modelling capability to fully integrate natural and	1	2	I am not sure anyone is doing true end-to-end models but many components are modelled

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	anthropogenic forcing factors affecting ecosystem functioning			
Quantify the relationship between habitat condition, ecological processes and the provision of ecosystem goods and services	8. Define and quantify north Atlantic Ecosystem Goods and Services, model their dependence on ecosystem processes and habitat condition and their social, economic and cultural value.	1	2	
	9. Identify indicators of ecosystem state and function for use in the assessment and management of ecosystem goods and services	2	3	

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SSGEPI	Priority area	2014	2016	Comments
Estimate long term trends of human	10. Develop historic baseline of population and community structure and production to be used as a basis for population and system level reference points.	2	3	WGHIST has identified useful datasets. Support for storage in ICES data center is needed. Next step is baseline development. The next 3 yr of this group should be related specifically to this TOR and perhaps be named something like WG Historical baselines
Understand, quantify and mitigate	11. Develop methods to quantify multiple direct and indirect impacts from fisheries as well as from mineral extraction, energy generation, aquaculture and other anthropogenic activities and estimate the vulnerability of ecosystems to such impacts.	3	3	Strong development of modelling of impacts from fisheries. Contaminant impacts has started to developed threshholds and is progressing steady and well.
	12. Develop approaches to mitigate impacts from these activities, particularly reduction of non target mortalities and enhancement/restoration of habitat and assess the effects of these mitigations on marine populations	2	2	Development is made in ICES but not particularly in EPI groups. Work has been done in relation to discards. WGSAM investigates impacts of bycatch on other target species through F. WGVHES has worked on the role of coastal habitats on exploited populations. We may get something related to essential fish habitat from that group. Score would be higher if other activities were evaluated. Remove priority from SSGEPI?
	13. Develop indicators of pressure on populations and ecosystems from human activities such as eutrophication, contaminants and litter release, introduction of alien species and generation of underwater noise.	3	4	With the recent movement of ITMO and BOSV into EPI this work will progress faster in the steering group. Aquaculture groups are progressing in terms of that particular type of eutrophication
Provide evidence in support of sustainable management of ecosystem goods and services	14. Evaluate ecological, economic and social trade-offs between ecosystem protection and sustainable use to advise on management of human activity in marine ecosystems	1	1	SGSA which looks and social dimension of aquaculture but it is in developing. WGMARS moved to IEA. Reevaluate the SSG TORs
	15. Develop tactical and strategic models to support short and long term fisheries management and governance advice and increasingly incorporate spatial components in such models to allow for finer scale management of marine habitats and populations	5	5	Tactical fisheries models both single and multispecies are well covered. Good work associating coastal habitats with exploited population dynamics. Spatial aspects are well considered in SIMWG and some nations (e.g. Iceland) has strong spatial aspects to their stock assessment which can make appearances in WGSAM. Support for WGMG to make sure it continues to be important and it is key to this SSG TOR.

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	17. Develop science in support of advisory needs in marine aquaculture systems, minimizing environmental impacts and integrating other marine sectors.	3	4	Primarily in WGAQUA, potential expansion but WGAQUA is actually spinning off TORS and workshops related to these areas. I do not see a strong need to change in this area, it is coming along as long as we continue to support the group.

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SSGIEA	Priority area	2014	2016	Comments
Develop a scoping process to identify objectives to guide IEA's in ICES regional Seas	18. Identify objectives for IEA's that address ecosystem stability and health, taking cognizance of ecological, social and economic sustainability goals as well as multi scale issues.	4		
	19. Identify issue based ecosystem questions relevant to science and management needs that can be addressed by developing IEA's	2		
	20. Provide priorities and specifications for data collection frameworks supporting IEA's.	3		
Advance IEA methodologies and approaches in the ICES context	21. Conduct pilot studies in data rich areas for alternative IEA approaches, linking quantitative and qualitative methods at appropriate spatial and temporal scales.	1		
Develop approaches that allow forecasting within an IEA and evaluation of the effectiveness of tradeoffs of different management options	22. Determine and demonstrate what modelling and analytical approaches will allow projections of ecosystem states in IEA's	3		
	23. Use IEA's to informing management about the effects of cumulative pressure and additive and non additive impacts, and which provide risk evaluations and analyses of tradeoffs between sectoral objectives.	1		
	24. Compare IEA and single issue approaches regarding their efficacy in providing management and governance advice on sectoral and multi sectoral use of the oceans.	2		

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SSGIEOM	Priority area	2014	2016	Comments
Identify and prioritize ICES monitoring and data collection needs	25. Identify monitoring requirements for science and advisory needsin collaboration with data product users, including a description of variable and data products, spatial and temporal resolution needs, and the desired quality of data and estimates	3	3	
	26. Develop a cost benefit framework to evaluate and optimize monitoring strategies in the context of the capabilities of, and reqests from ICES Member Countries and clients.	2	4	
Develop further the methodology for the observation and monitoring of marine ecosystems in the ICES area.	27. Identify knowledge and methodological monitoring gaps and develop strategies to fill these gaps	2	2	
	28. Promote new technologies and opportunities for observation and monitoring and assess their capabilities in the ICES context	4	4	
	29. Promote the development and testing of new fishing gear technology and methods for selective reduction of by-catch and discards and for mitigation of other environmental impacts of fishing	4	4	
Implement integrated monitoring in the ICES area	30. Allocate and coordinate observation and monitoring requests to appropriate expert groups on fishery dependent surveys and sampling and monitor the quality and delivery of data products.	3	4	
	31. Ensure the development of best practice through establishment of guidelines and quality standards for (a) surveys and other sampling and data collection systems; (b) external peer reviews of data collection programmes and © training and capacity building opportunities for monitoring activities	3	3	

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4.2 Advice

OVERVIEW

2014					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**
1				**3**	
2		**2**	**1**	**2**	
3		**1**	**1**	**7**	**2**
4	**1**	**2**	**2**	**2**	**2**
5					
	N = 1 Action	**N = 5 Actions**	**N = 4 Actions**	***N = 14 Actions***	***N = 4 Actions***

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

2015					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**
1				**2**	
2		**1**	**1**	**3**	
3		**4**	**1**	**5**	**1**
4			**2**	**2**	**3**
5	**1**			**2**	
	N = 1 Action	**N = 5 Actions**	**N = 4 Actions**	***N = 14 Actions***	***N = 4 Actions***

2016					
SCORE	***Deliver relevant timely and credible advice*** **SA 1 and 2**	***Foster efficient use of resources and quality assurance*** **SA 1, 2, 3 ,4**	***Improve data collection and use*** **SA 1, 2, 3, 4**	***Develop Scope of Advice*** **Sa 1, 2, 3, 4**	***Develop process and Communications*** **SA 4**

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1				2	
2			1	3	
3		3	1	3	2
4		2	2	3	1
5	1			3	1
	N = 1 Action	N = 5 Actions	N = 4 Actions	*N = 14 Actions*	*N = 4 Actions*

MoU

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ACOM	ACOM Category	ACOM - Action	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	1. Deliver relevant, timely and credible advice	Implement MOU's with advice recipient	4	5	5

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Quality

ACOM	ACOM Category	ACOM - Actions	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	2. Foster efficient use of resources and quality assurance	Implement RCT and priotitiuse resource use	4	3	3
		Further excplore and implement, where appropriate multiannual evaluations of management measures (the state of the stock) for the provision of annual advice	2	3	3
		Enhance substantive support by ICES Scretaariat to the advisory process	4	3	4
		Implement the CARA system ; Automate the process of transferring assessment results from the assessment software to the advisory sheets, including standard graphs	2	2	3
		Conduct internal audits of data. Input and assessment results for all advice providing expert groups	3	3	4

Data

ACOM	ACOM Category	ACOM - Actions	Gut Feeling		
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	3. Improve data collection and use	Coordinate and integrate surveys	2	2	2
		Develop guidelines for best practice in design and aimplementation od statistically sound catch sampling schemes	4	4	4
		Identify the data required to provide advice on fisheries and environmental issues and communicate the requirements to those responsible for the collection of data	4	3	3
		Promote efficient and effective data storage through integration of data in regional databases, including making data available for experts through intercatch	3	4	4

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Scope

ACOM	ACOM Category	ACOM - Actions	2014	2015	2016
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	4. Develop scope of advice	Provide advice in relation to the changing policy environment . Facilitate transition of a new regime, new data, ecosysterm impacts and fisheries opportunities.	3	4	4
		Further develop/implement methodologies, which entails establishment of indicators and targets for all stocks, including data limited stocks (DLS)	4	5	5
		Provide advice taking into account technical interactions in each mixed fishery, as well as biological interactions between stocks, such as predation and competition in each ecoregion, per an established schedule, including a link with social and economic aspects when possible.	3	3	4
		Further develop capacity for provision of advice for emerging human activities in the Arctic - taking into account ecosystem considerations; monitor stock distributions into the Arctic region; data requirements and monitoring needs in the Arctic	1	3	3
		Advisory needs for aquaculture and its environmental aspects	3	5	5
		Integrate considerations fo by catch in the advice for fisheries (including elasmobranchs, mammals and seabirds)	3	3	4
		Integrate considerations of impacts of sensitive habitats in the advice fort fisheries	3	3	3
		Prepare methodologies and examples of impact assessments of management measures that account for environmental variability and social and economic trade offs	2	2	2
		Include discussion on social and economic analysis needs of users of advice in an ICES Dialogue meeting	1	1	1
		Facilitate transition from single stock benchmarks to regional benchmarks	2	2	2
		Further develop ecosystem overviews on a regional scale	4	4	5
		Provide advice on Marine Spatial Planning	1	1	1
		Develop mechanisms for promoting IEU as a basis for ICES advice	3	3	3
		In cooperation with Member Countries and regional seas organisations, develop IEA for the Baltic, North Sea and Barent Sea for use in advice provide exampoles of how IEA can be used in advice	3	2	2

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Communication

ACOM	ACOM Category	ACOM - Actions	Gut Feeling	Gut Feeling	Gut Feeling
Evaluater and advise for the sustainable use and protection of marine ecosystems (Goal 3)	5. Develop process and communication	Further develop the capacity of the ICES community and the stakeholders/policy developers to facilitate their interaction and dialogue as well as involvement in the advisory process	3	4	4
		Communicate advisory products to the public	4	4	3
		Communicate the advice through meetings with competent authorities and stakeholders	4	4	5
		Suport existing expert Groups chairs and potential future chairs to ensure they have the necessary skills (e.g. Training etc.)	3	3	3

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4.3 Data

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

OVERVIEW - % of Actions in each Score Category

Score	Score label	Regional products (8)	Interoperability (2)	Knowledge and Training (3)	*Data stewardship and Management (6)*
1	Not Started	11%			
2	Just Started	11%		33%	
3	Some Progress	11%	50%		
4	Good Progress	44%	50%	33%	40%
5	Doing Well	22%		33%	60%

SCORE	
1	Not Started

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and services to an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Regional Facilitation

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Regional Facilitation	Regional operational products for MSFD and the DCF	MSFD workflow: Collaboration between ICES Data Center and Regional Sea Conventions / other organisations with respect to MSFD (WISE-Marine Production Process). This assumes a good flow of data data harvesting into the data center and this and this can imply more resources in certain data types where data are not readily provided.	1	5	
		Leading to a joint MSFD data flow vision paper. Also depends on WISE-Marine. Secretariat Plan	1	4	
		New processes/products from existing data within Advisory and Science Groups with respect to MSFD: calculations for indicators. Needed: data selections, algorithms, calculation examples. Challenge: Who is going to decide on the final calculations and selections?. Workshop on MSFD related DC-MAP indicators Refer to table (MSFD table of ICES data/EG's and their operational product linkage).	1	4	
		Data requirements with regard to multispecies assessments (input for assessments). Currently ispecies assessments are applied ine.g. the Baltic but insufficient spatial data products are available. Bal;tic, other areas (Action Plan to be created). Needed: clear data request (unless no data are available)	1	4	
		Data requirements for e.g. one species from all fish surveys (WGEF, WGNEW); search f	1	5	
	End to End Workflow for Scientific Advice	CARA linking to data outputs from Expert Groups (connecting the scientific reports to the advice production)	1	4	
	Production	CARA linking to data outputs from RDB - Fish Frame.	1	2	
	Mobilizing Aquaculture Specfic Data	Aquaculture Database: exact description to be decided. Related to WGAQUA.	1	1	
	Mobilizing Arctic Specific Data	In co-operation with AMAP, getting data from small Arctic research institutes. Implementing data formatting tool.	1	3	

1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well
	%
1	11%
2	11%
3	11%
4	44%
5	22%
N = 8 Detailed Actions	

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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International standards and interoperability

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

The Data and Information Services Picture

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
International Standards and Interoperability	Ensuring INSPIRE readiness for ICES managed datasets / data services	Describe and make available all ICES / ICES Expert Group managed datasets, data products or services through ISO/INSPIRE standards to allow their discovery and reuse by other expert groups, processes and member country activities.	**1, 3**	4	
	Encouraging the broader use of ICES datasets by implemen-ting IODE quality flaggig schema	Building on the quality control database that is in the process of being populated and then exposing to online users in a digestible way to make the linkage between type of data type(s) of QC performed and the QC flags applied to the data.	**1, 3**	3	

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

	%
1	0%
2	0%
3	50%
4	50%
5	0%

N = 2 Detailed Actions

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Knowledge transfer and professional development

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

The Data and Information Services Picture

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Knowledge Transfer and Professional Development	Input to Key Data Symposia and Science Meetings	Data theme sessions (ASC, IMDIS, etc.); Annual theme sessions proposal ASC by DIG	3	4	
	Training and Reference Guides for Scientists and Data Managers	ICES training courses: " Making the most of ICES Data " modular, Webinars ?	3	2	
		Online materials and guidance: WKIDG in 2014	3	5	

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

	%
1	0%
2	33%
3	0%
4	33%
5	33%

N = 3 Detailed Actions

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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Data stewardship and data management

DIS	Headline Action	Detail of Headline Action	Supporting Activity	Gut Feeling	PI
Data Stewardship and Data Management	Data mining and data recovery; identifying and making available data ses that are relevant to the marine community	Benthic historical data recovery. Plan ready. No time frame. Connected to BEWG, DGMARE (DC-MAP) related, perhaps EMODnet biology?	3	5	
		Legacy data: data that are in other systems, but not available to the wider world. Linking to other data archives i.e. through metadata	3	4	
		Other historical data	3	N/A	
	Ensduring ICES data are citable in the digital age and therefore making the datasets easier to discover	Digital data citation and publication: ensuring ICES data are citable in the digital age and ensuring contributing data sources are duly credited, as well as guiding the ICES Member Countries on how to approach digital citation.	3	4	
	Maintaining the user rights, security and integrity of the data sources to ICES managed datasets	Data Policy - facilitation of rights issues	3	5	
		Data security and implications if data portfoliochanges in nature (i.e. VMS, VME etc).	3	5	

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

	%
1	0%
2	0%
3	0%
4	40%
5	60%

N = 6 Detailed Actions

GOAL 4 - Promote the advancement of data and information services for science and advice needs

GOAL 5 - Catalyse best practice in marine data management and promote the ICES data nodes as a global resource

Supporting Activities (SA) of Data and Information Services to achieve Goals 4 and 5

1. Promoting the advancement of data and information services for science and advice needs at both regional and sub regional level such as providing operational products for marine spatial planning, the Data Collection Framework and for the Marine Strategy Framework Directive.
2. Gearing up for new areas of dataset collections, such as new datasets for integrated ecosystem, monitoring, including marine litter and anthropogenic moise in the marine environment.
3. Ensuring the use of international standards/interoperability to enable the use and application of ICES datasets, products and servicesto an expanded international user base, and to provide tools and knowledge to facilitate that use.

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4.4 Secretariat

Overview

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

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

OVERVIEW - % in each Score Category

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

2014

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		1
2		1
3	2	2
4	2	4
5		1
	N = 4 Actions	N = 9 Actions

2015

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		
2		2
3	2	1
4	2	5
5		1
	N = 4 Actions	N = 9 Actions

2016

	Goal 6 Foster the science, advisory Data and Information Services	Goal 7 Efficient and Effective Organisation
1		
2		2
3		1
4	3	4
5	1	2
	N = 4 Actions	N = 9 Actions

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Goal 6

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

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

Secretariat	Secretariat Plan - Action	Gut Feeling 2014	Gut Feeling 2015	Gut Feeling 2016	Performance Indicators
Foster the science , the advisory and the data information services through the work of the Secretariat (Goal 6)	Strategic support to the Council, Bureau, and the committees by provision of inputs regarding foresight of needs and options for development of science, scientific advice, and data.	4	4	5	Provision of timely & relevant inputs re. emerging science and advice
	Interact with external networks and communicate scientific priorities	3	4	4	Identification of new partners Reflected by new MoUs, LoAs, and strategic projects
	Increase the level of professional support across the ICES work plan to provide data compilation, and initial analysis for consideration to ensure best use of expert resources, inter alia, by strengthening the ecosystem profile in the Secretariat to support priority working areas identified in the ICES Strategic Plan.	4	4	4	Data & analysis made available to meetings Identification of an appropriate process where SEC support useful Meeting prep tasks re-assignment amongst SEC staff to ensure effcient use of resources
	Projects - interface with scientific groups and organisations and identify and facilitate participation in strategic work that supports the aims of the ICES Strategic Plan. Seek to link project work with participants from academia.	3	4	4	ICES represented in project consortia Ext. projects support work of ICES

SCORE	
1	Not Started
2	Just Started
3	Some Progress
4	Good Progress
5	Doing Well
	%
1	
2	
3	
4	
5	
	N = 4 Actions

Supporting Activity for Secretartiat to achieve Goals 6 and 7

1 . Securing the needed resources for the ICES Secretariat to support ICES science, advisory services, data processes and products and for publications and communications;

2. Implement effective tools and efficient process flow to streamine work processes and enhance the delivery of products;

3. Organising and supporting the resource planning and coordination of network activities;

4. Fostering cooperation and communications with Member Countries, partner organisations, stakeholders and society.

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Goal 7

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

The Secretariat Picture after 24 months - A look at Performance - A Qualitative Approach

Secretariat	Secretariat Plan - Action	Gut Feeling 2014	Gut Feeling 2015	Gut Feeling 2016	Performance Indicators
Ensure an efficient and effective organisation (Goal 7)	Facilitate effective and focused use of expert and infrastructure resources by making ongoing resource requirements transparent to national institute rersource managers using the Resource Co-ordination Tool (RCT)	4	4	4	Tool developed for use internally and externally
	Facilitate common access to ICES processes by developing work that draw on external resources readily available including the tasks, processes and meetings	3	4	4	Accessibility to common access tool that facilitates external access and stremlines procedures
	Develop and Improve the Training Programme and facilitate and test the online accessibility of the ICES Training Programme	1 or 2?	2	2	A training course accessible via online participation
	Develop and improve the Training Programme: reach out and engage with academia to widen target audience.	1 or 2?	2	2	More joint training courses available
	Publications - facilitate the electronic dissemination, availability and visibility of the products of ICES processes including technical reports, scientific publications and advice	5	5	5	Move towards electronic publications dissemination ICES docs with permanent digital traceable identities
	Further develop and implement the Content Administration for Reports and Advice (CARA)	3	3	3	Uptake of CARA in exp groups Full use in Adv process
	Maintain and develop high quality meeting facilities at ICES headquarters, embracing new technologies	4	4	4	One meeting room developed with best tech, with eventual spread to other rooms
	Create communications that focus on prioritised areas as defined by the Strategic Plan - promote the work of the ICES community and its relevance to society - make available various tools (ICES website, social media) for the community to communicate their work	4	4	5	Outreach material linked to ICES deliverables and outcomes (ICES video) Social media presence & increased community use/discussion
	Ensure that the Secretariat is able to respond to emerging science, advisory and data needs with relevant professional competence, reviewed by Secretariat management	4	4	4	Ready to respond to emerging needs

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

%	
1	
2	
3	
4	
5	

N = 9 Actions

Supporting Activity for Secretartiat to achieve Goals 6 and 7

1 . Securing the needed resources for the ICES Secretariat to support ICES science, advisory services, data processes and products and for publications and communications;
2. Implement effective tools and efficient process flow to streamine work processes and enhance the delivery of products;
3. Organising and supporting the resource planning and coordination of network activities;
4. Fostering cooperation and communications with Member Countries, partner organisations, stakeholders and society.

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Finance Committee
June 2016
Document 8

Science Investments

Yvonne Walther, Adi Kellermann, Jörn Schmidt, Henn Ojaveer and Wojciech Wawrzynski

ICES
CIEM
Science for sustainable seas

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CORE BUDGET Science Leadership - 550’000 DKK

Instrument	Cost	Output	Effect	Impact	Goal
Operational costs for 5 SSG chairs*	100‘000 DKK per SSG chair (500‘000 DKK in total)	Co-ordination of Expert Groups Support of science development for current advisory needs	SSG chairs : are actively contributing to ICES Science leadership can dedicate time and prioritize ICES work in a structural manner can respond to tasks effectively are able to participate actively in EG work, support in drafting ToRs Feel responsible in strategic science development	Effective Science Leadership in balance -SCICOM chair fulltime and SSG chairs part time Realisation of crosscutting effects between SSG science priorities Science and Advisory Leadership can effectively work, communicate and include latest science in advisory processes	Implementation of ISP and Science Plan
WGChairs meeting	50‘000 DKK	Increase communication with and between EGs	EG chairs: Better understand their role and requirements in science delivery in ICES Effectively adopt their ToRs towards Science Plan	EG chairs foster an active science community A balanced portfolio of EGs that reflects the Science Plan needs	Implementation of ISP and Science Plan

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Equity Budget

Instrument	Cost (DKK)	Output	Effect	Impact	Goal
Strategic Initiatives (SISAM, SIHD, SICCME)	150.000	Resolutions for Strategic initiatives Activities in ASC, Symposias Development of Expert Groups Establish links to new scientific partners	• New science fields and challenges are included in Science portfolio	ICES is recognized as a knowledge partner ICES establishes links with new partners	Implementation of ISP and Science Plan
Early Career Scientists Conference (equity)	400.000	Foster the next generation of ICES scientists, link with academia, spread the word about ICES	• Attract new expertise • Explore new science fields • Generate new leadership	ICES Science : • Recruiting young academics • Explore new interdisciplinary expertise	Capacity building
Science Fund (equity)	500.000	Regularly Issue calls for Science projects that are relevant implementing the ICES Science Plan and ICES Strategy	• Establish strong and effective links with broader academia • explore new science fields • add value to work of EGs • Fill gaps in the Science Plan • Attract new expertise	ICES Science : • remains cutting edge • is updated to social needs and context • has relevant expertise available	Implementation of ISP and Science Plan, Capacity building
Action areas Arctic, aquaculture, human dimension	100.000	Design relevant activities that support ICES high priority work areas through: ASC, Expert Groups, IJMS, Symposia and Workshops Effectively communicates with partners in action areas	ICES is • linked with strategic knowledge partners • Provides relevant science to high priority areas	ICES science • Is responsive to global changes • Provides relevant science to societal needs • is recognized as a knowledge partner • Provides science that can be developed into advice in action areas	Action areas
Interaction with existing ICES Scientific partners (PICES/CIESM)	100.000	Create activities together with partners (workshops, symposia, joint EGs)	• Further effective and long-lasting partnerships • Attract new expertise • Create new challenges	ICES is recognized as a knowledge partner A relevant partner in global science areas	Implementation of ISP

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Science investments 2016
Council investment 150K DKK - support for science activities in 2016
Remain of Science Fund 200K DKK– Total 350 000 DKK

Instrument	Cost	Output	Effect	Impact	Goal
Interaction with major ICES Scientific partners (PICES/CIESM)	20.000 DKK	World Fisheries Conference 2016, Busan, Korea	Strengthen ICES postion in the global fisheries science community	• Create strong and effective partnerships • Improve science in support of furture advisory needs	ICES knowledge partner
Interaction with major ICES Scientific partners (PICES/CIESM)	60.000 DKK	PICES 25 annual meeting in San Diego, US, November 2016,	Strengthen ICES position in the field of ocean acidification internationally	• Create and maintain strong and effective partnerships	Interaction with partners, ICES knowledge partner
Interaction with major ICES Scientific partners (PICES/CIESM)	10.000 DKK	ICES session convener 2016 CIESM scientific conference, Kiel, Germany, September 2016;	Strengthen ICES position in the field of marine bioinvasion science internationally	• Create and maintain strong and effective partnerships	Interaction with partners, ICES knowledge partner
Strategic initiatives	150.000 DKK	Resolutions for Strategic initiatives Activities in ASC, Symposia, Development of Expert Groups	Emerging and strategically important science disciplines and challenges are included in ICES Science portfolio	• ICES is recognized as a knowledge partner • Create and maintain strong and effective international partnerships	Implementation of ISP and Science Plan
Additional support to Action areas	75.000 DKK	Format under consideration	Strengthen ICES postion in the field of Arctic and aquaculture science internationally	ICES science • Is responsive to global changes • Provides relevant science to societal needs • is recognized as a knowledge partner • Provides science that can be developed into advice in action areas	Participate in advancing Arctic and aquaculture sciences in a wide international collaboration
Process towards better integration of data input from science and data products to be delivered,	35 000 DKK	Workshop and activities by Data centre, DIG and SSGIEOM	Increased communication and improved deliverables between data providers and receivers	Improved data landscape in ICES Increased accessibility and use of available data	Implementation of ISP and Science Plan

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ICES CIEM
International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

CM 2016 Del-3.1.2

Agenda item 3.1

Proposed Budget 2017

Council is requested to:

- ***Vote*** *on the proposed budget for 2017, noting that the national contributions have already been decided;* ***(CM 2016 Del-3.1.2****)*

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	Budget 2017
National Contribution	22,363,000
Faroe Islands & Greenland	418,000
National Contribution	**22,781,000**
NEAFC Contribution (Advice)	2,356,743
OSPAR Contribution (Advice and Data)	1,250,000
HELCOM Contribution (Data)	470,000
NASCO Contribution (Advice)	539,492
Special requests	250,000
EC Contribution (Advice)	10,400,000
Norway MoU	840,000
Income from Commissions	**16,106,235**
Project income - hours incl. overhead	2,880,650
Project income - Projects in Pipeline	0
ASC income	490,000
Income from ICES Journal	1,400,000
Sale of Publications	5,000
Income Eurofish	200,000
Income Training courses	860,000
Miscellaneous income	20,000
Other Income	**5,855,650**
TOTAL INCOME	**44,742,885**
Salaries - Management and Administration	5,200,000
Salaries - Communications	529,500
Salaries - Advisory Programme	8,071,000
Salaries - Science Programme	3,535,000
Salaries - Publications	1,772,000
Salaries - IT	1,800,000
Salaries - Data Centre	9,624,000
Salaries - Total	30,531,500
Fees for External Consultants	250,000
Overtime for Gen. Staff	15,000
Social activities Cond. /Cond.	65,000
Education, Training, Team building	200,000
Honorarium ACOM Chair and Vice Chairs	2,200,000
Honorarium SCICOM Chair	1,063,500
ATP Pensions ICES 2/3 share	115,000
Salaries	**34,440,000**
Electricity	132,000
Heating	236,000
Safety and Security	191,000
Cleaning	167,000
Stationery	31,000
Photocopy and Printer paper	5,000
Paper (Letterhead, envelopes etc.)	2,000
Postage	100,000

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Telephone, Fax, Etc	0
Office Equipment (Workplace furniture)	112,000
Insurance	288,000
Miscellaneous Expenses	121,000
Office Maintenance	221,885
Facility improvements	223,000
Library: Books, Subscriptions	30,000
Public Relations (Including souvenir shop)	47,000
Accounting and Auditing	91,000
Legal Assistance	20,000
Office Expenses	**2,017,885**
Leasing Contracts	1,010,000
Hardware Support Contracts	470,000
Software Support Contracts	334,000
Software License Contracts	453,000
Hardware non-contract	189,000
Software non-contract	58,000
Outsourcing	0
Remote/cloud services	80,000
Communication	161,000
Domains/certificates	8,000
IT-investments	0
Consultancies	50,000
Other costs	80,000
IT Expenses	**2,893,000**
General Expenses: Transport, Handbooks, Gifts	300,000
Travel: Secretariat Staff and Chairs	450,000
Host Country Share	160,000
Enhance Science/Keynote Speakers	50,000
Promotion for Young Scientists	110,000
Expenses for ASC	**1,070,000**
Statutory meeting	15,000
President, Bureau + sub Groups	320,000
Secretariat travel per Cost Center	685,000
External reviewing of assessments/benchmarking	500,000
Travel costs for RAC	60,000
ACOM travel and meeting costs	300,000
ACOM Chairs and vice chairs travel	480,000
Advice Drafting Groups travel	1,100,000
SCICOM travel and meeting costs	400,000
ICES co-sponsored Symposia (per Symposia)	150,000
Young scientist conference	450,000

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SCICOM strategic activities	0
Science Fund	0
Demonstration advice	0
Internal/external review of ICES Science Travel	0
Strengthening the Science Leadership (travel)	550,000
Training support for DG MAREs officials	100,000
Course income/expenses	620,000
Travel and meetings	**5,730,000**
ICES Marine science Symposia	160,000
Publications general	80,000
ICES Annual Report	80,000
ICES Cooperative Research Reports	82,000
ICES Leaflets for Plankton and Diseases	21,000
ICES Times	12,000
ICES Newsletters	40,000
ICES Advice Publications	0
Editor in Chief ICES JMS reimbursement of expenses	0
ICES Communications	200,000
Publications	**675,000**
	0
TOTAL EXPENSES	**46,825,885**
	0
Operating Result	**-2,083,000**
	0
Interest	-100,000
Transfer from Equity	-1,983,000
Result	**0**
Transferred from Equity:	
Young Scientists Conference	-450,000
ACOM assessments workload issue (1.275.000)	-1,275,000
Regional database	-258,000

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Long-term strategy for increase in national contributions

The e-voting procedure on 2017 national contributions resulted in a decision to maintain the level for 2017 at the 2016 level. Given the near-term projection of budget deficit if national contributions continue to remain stable, Finance Committee and Bureau have recognized the importance of a well-justified long-term strategy, be it 5% for a fixed period of time, annual increases, or another solution to minimize a potential deficit.

This document presents the projected development of the deficit in the ICES budget, in a five-year perspective, to help frame the discussion, as well as suggests a potential way forward, seeking an increase in national contributions of 5% over a time period of either three (3) or five (5) years, given that the inflation level remains at or below the current level of 0.5%.

A proactive approach of National Delegates is needed to agree on the way forward, and securing an increase in national contributions, as referred to in Article 14, paragraph 2 of the 1964 ICES convention "The Council shall by a 2/3 majority vote of all Contracting Parties approve an annual budget of the Council".

It is clear that a combination of strategies is needed, as none of the strategies on their own will be enough to cover the anticipated deficit. An agreed increase in national contributions is, however, a first step.

1 Introduction

At a Council meeting in 1974 an allocation system was agreed, whereby national contributions were arranged in accordance to shares, ranging from one, one and a half, to four shares, one share having the value of 418,000 DKK (2017 figures). Greenland and the Faroe Islands share one share.

During the past 10 years the relative share of national contributions has decreased from 70% of total income in 2000–2001 to 57% of total income in 2010–2011, and is now down to 51% in 2015– 2016. This is partly due to the lack of increase of the national contributions for 6 out the most recent 8 years (2010, and 2012–2015, and 2017), representing a substantial decrease for ICES income in the annual operating budget (approximately 12.3 million DKK).

To better understand and address this trend of stable contributions, Council decided that during the first part of 2016 the ICES General Secretary should visit Member Countries to explain the expanded scope and deliverables of ICES, as agreed in the ICES Strategic Plan, as well as the opportunities for Member Countries to make use of ICES services. This information would be related to the requested 2% increase of national contributions, which ranges from an additional payment of 8.400 DKK up to 33.500 DKK, depending on the number of shares held by the Member Country.

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A number of Member Countries recognised that the increase was minimal and that the overall payment to ICES was small compared to the value of the services received and compared to contributions to other regional/global organizations. A variety of barriers to positive voting for annual increases were, however, provided:

- a general policy of no-increase in national contributions to IGOs;
- increases not possible on an annual basis, other periodicities could be explored;
- an increase not possible in the current timeframe/budget year.

2 Long-term projections of the ICES budget

The 2016 Finance Committee meeting looked at long-term projections for the ICES budget in relation to national contributions.

These projections showed that even with an annual 2% increase in national contributions from 2017- 2021, a deficit in the ICES budget was foreseen in 2019, 2020, and 2021. In addition to the anticipated 2% annual increase, the budget projections were based on an anticipated annual:

- project income (2019 – 2021) of 2,000,000 DKK;
- no inflation regulation of any MoUs;
- income in 2019-2021 from the ICES Journal of 1,400,000 DKK; and
- salary costs, inflation regulated with 1% for 2017, and 2% for 2018-2021.

Given the outcome of the 2017 voting, the new five year projections have been made with a 0% increase in national contributions. With this projection a deficit is expected already in 2018.

3 Possible long-term strategy for increase in national contributions

Finance Committee considered various strategies for the increase in national contributions, 1%, respectively 2% increase annually, and a 5% increase within a five-year timeframe. The model of 2% annual increase was the most financially beneficial.

The Finance Committee concluded that it is unlikely to find a strategy for achieving increases in national contributions that is agreeable to all 20 member countries. ICES should continue to pursue the aim of 100% cost recovery. The potential and implications of extraordinary budgetary contributions should be further developed. Longer term planning perspective and equitable increases is the preferred approach. If the next few years continue to result in no (0%) increase in national contributions other suboptimal strategies may need to be considered.

At the June Bureau meeting the following points were raised:

The General Secretary visits to Member Countries have been a positive experience, and many opportunities to discuss with countries, about finances as well as other issues. Albeit, the visits did not result in securing the required 2/3 majority needed for a 2% increase in 2017 national contributions, the voting did result in a simple majority (12 out of 20) voting in favour of a 2% increase in 2017.

Given the varying needs of Member Countries, it may not be possible to identify one strategy that is agreeable to all.

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For some countries the longer-term planning perspective is important, while for others the annual 2% increase would be seen as preferable, and for some it would be preferred to request an increase from time to time.

Agreeing on a budget that would be locked in for a longer time period (e.g. 5 years) could also be dangerous politically and risk fixing the budget based on changing inflation rates.

An alternative could be to negotiate with Countries individually, but this poses a risk to the way the organization operates and moves away from the current share system. Finance Committee did not support the idea of different rates of increase for different countries as this was considered inequitable.

The current strategy to get costs covered from other international agreements (The Joint Norwegian-Russian Fisheries Commission) puts less pressure on pursuing increases in national contributions, but is unlikely to ensure financial coverage of the expected deficit even in the short-term.

The option to increase income by requesting payment for advice from member countries is not relevant for all (Canada and US).

Extra budgetary contributions from member countries could be a potential way to deal with the budgetary shortfalls.

Given the limited amount of equity remaining, future expected (following this five year projection period, 2017-2021) budget deficits will need to consider alternative means for meeting the shortfall.

Summary on possible strategies:

- Annual increase
- Bi-annual increase
- An increase for a fixed time interval
- Pursuing the 100% cost recovery, e.g. for recurrent advice to the Russian Federation, Iceland, Greenland, and the Faroe Islands
- Extra budgetary contributions

It is clear that a combination of strategies is needed, as none of the strategies on their own will be enough to cover the anticipated deficit. In order to avoid expected budget deficits, a proactive approach of National Delegates is required to provide input on potential strategies for securing increases in national contributions (percentage level/periodicity).

Active engagement from national delegates is also needed to ensure they have the required mandate to vote on behalf of their country at the appropriate time, as referred to in Article 14, paragraph 2 of the 1964 ICES convention "The Council shall by a 2/3 majority vote of all Contracting Parties approve an annual budget of the Council".

4 Suggested way forward to increase national contributions

Given the new strategy, departing from the usual proposal for a 2% increase in national contributions, it is proposed to:

1. Delay voting for 2018 until February 2017. This will give Delegates time to engage with the relevant authorities and to secure the mandate needed to vote on behalf of their country;
2. agree on a 5% increase in the national contributions for a given period of either 3 or 5 years;

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3. agree on a condition, in case agreement is reached to increase the national contributions by 5% over a given period, that if the current inflation level increases substantially (i.e., more than a two-fold increase) there should be an opportunity to open the discussion on a corresponding increase in national contributions.

5 Background information

In the tables below a variety of scenarios are described for different long–term strategies for how to increase the national contributions.

The tables provide an overview of:

- Table 1. ICES Budget five-year projection with 0% increase in National Contributions.

- Table 2A. A 2 % increase annually in national contributions 2016-2021

- Table 2B:

  1) A 5 % increase one year, within a five year timeframe; and

  2) A 5 % increase one year, within a three year timeframe.

- Table 2C. A 1 % increase annually, within a five year timeframe.

- Table 3 Actual and proposed increases in national contributions 2012-2016, including the deficit in the budget.

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TABLE 1 ICES Budget five-year projection with 0% increase in National Contributions.

	Revised	**Forecast**	**Forecast**	**Forecast**	**Forecast**
	Budget 2017 with 0% increase	**Budget 2018 with 0% increase *)**	**Budget 2019 with 0% increase**	**Budget 2020 with 0% increase**	**Budget 2021 with 0% increase**
National Contribution	22,781,000	22,781,000	22,781,000	22,781,000	22,781,000
Income from Commissions	16,106,235	16,115,000	16,115,000	16,115,000	16,115,000
Other Income	5,855,650	5,712,000	5,712,000	5,712,000	5,712,000
TOTAL INCOME	**44,742,885**	**44,608,000**	**44,608,000**	**44,608,000**	**44,608,000**
Salaries	34,440,000	34,403,907	35,653,888	35,710,891	36,391,318
Office Expenses	2,017,885	2,017,885	2,017,885	2,017,885	2,017,885
IT Expenses	2,893,000	2,893,000	2,893,000	2,893,000	2,893,000
Expenses for ASC	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000
Travel and meetings	5,730,000	5,730,000	5,730,000	5,730,000	5,730,000
Publications	675,000	675,000	675,000	675,000	675,000
TOTAL EXPENSES	**46,825,885**	**46,789,792**	**48,039,773**	**48,096,776**	**48,777,203**
Operating result	**-2,083,000**	**-2,181,792**	**-3,431,773**	**-3,488,776**	**-4,169,203**
Interest	-100,000	-200,000	-200,000	-200,000	-200,000
Council decision to transfer from Equity	-1,983,000	-1,275,000	-1,275,000	-318,750	0
Result	**0**	**-706,792**	**-1,956,773**	**-2,970,026**	**-3,969,203**

*) Even a 2% increase will lead to a deficit of DKK 471,500

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Assumptions, on the basis of which table Table 1 has been elaborated

- National contribution increased by 0% each year
- Project income is approximately 2,000,000 each year from 2019 to 2021
- The MoU with clients are not inflation regulated
- ICES Journal earns 1,400,000 each year in 2019-2021
- Salaries are inflation regulated with 1 % in 2017, and with 2% in 2018-2021

The following has not been included to the table, but are potential additional/higher income figures to be considered

- Additional recurrent advice income of around 1 million DKK
- Additional project income (Potentially a bigger project income 2019-2021, but requires activation of more "proactive" approach)

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TABLE 2A

A 2 % increase annually in national contributions 2016-2021													
Number of shares	**1.9% 2016**	**Payment 2016 DKK with 1,9% increase**	**0% 2017**	**Payment 2017 DKK with 0% increase**	**2% 2018**	**Payment 2018 DKK with 2% increase**	**2% 2019**	**Payment 2019 DKK with 2% increase**	**2% 2020**	**Payment 2020 DKK with 2% increase**	**2% 2021**	**Payment 2021 DKK with 2% increase**	**Total increase 2016 - 2021 per share(s)**
1 share	8.000	418.000	8.000	418.000	8.360	426.360	8.527	434.887	8.698	443.585	8.872	452.457	**34.457**
1,5 shares	12.000	627.000	12.000	627.000	12.540	639.540	12.791	652.331	13.047	665.377	13.308	678.685	**51.685**
2 shares	16.000	836.000	16.000	836.000	16.720	852.720	17.054	869.774	17.395	887.170	17.743	904.913	**68.913**
3 shares	24.000	1.254.000	24.000	1.254.000	25.080	1.279.080	25.582	1.304.662	26.093	1.330.755	26.615	1.357.370	**103.370**
4 shares	32.000	1.672.000	32.000	1.672.000	33.440	1.705.440	34.109	1.739.549	34.791	1.774.340	35.487	1.809.827	**137.827**
ICES budget Total 54,5 shares	436.000	22.781.000	436.000	22.781.000	455.620	23.236.620	464.732	23.701.352	474.027	24.175.379	483.508	24.658.887	**1.877.887**

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TABLE 2B

1) A 5 % increase one year, within a five year timeframe

Number of shares	1.9 % 2016	Payment 2016 DKK with 1,9% increase	0% 2017	Payment 2017 DKK with 0% increase	5% 2018	Payment 2018 DKK with 5% increase	0% 2019	Payment 2019 DKK with 0% increase	0% 2020	Payment 2020 DKK with 0% increase	0% 2021	Payment 2021 DKK with 0% increase	Total increase 2016 - 2022 per share(s)
1 share	8.000	418.000		418.000	20.900	438.900							**20.900**
1,5 shares	12.000	627.000		627.000	31.350	658.350							**31.350**
2 shares	16.000	836.000		836.000	41.800	877.800							**41.800**
3 shares	24.000	1.254.000		1.254.000	62.700	1.316.700							**62.700**
4 shares	32.000	1.672.000		1.672.000	83.600	1.755.600							**83.600**
ICES budget Total 54,5 shares	436.000	22.781.000		22.781.000	1.139.050	23.920.050		23.920.050		23.920.050		23.920.050	**1.139.050**

2) A 5 % increase one year, within a three year timeframe

Number of shares	1.9 % 2016	Payment 2016 DKK with 1,9% increase	0% 2017	Payment 2017 DKK with 0% increase	5% 2018	Payment 2018 DKK with 5% increase	0% 2019	Payment 2019 DKK with 0% increase	0% 2020	Payment 2020 DKK with 0% increase	5% 2021	Payment 2021 DKK with 5% increase	Total Increase 2016 – 2023 per share(s)
1 share	8,000	418,000		418,000	20,900	438,900					21,945	460,845	**42,845**
1,5 shares	12,000	627,000		627,000	31,350	658,350					32,918	691,268	**64,268**
2 shares	16,000	836,000		836,000	41,800	877,800					43,890	921,690	**85,690**
3 shares	24,000	1,254,000		1,254,000	62,700	1,316,700					65,835	1,382,535	**128,535**
4 shares	32,000	1,672,000		1,672,000	83,600	1,755,600					87,780	1,843,380	**171,380**
ICES budget Total 54,5 shares	436,000	22,781,000		22,781,000	1,139,050	23,920,050		23,920,050		23,920,050	1,196,003	25,116,053	**2,335,053**

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TABLE 2C

A 1 % increase annually, within a five year timeframe													
Number of shares	**1.9 % 2016**	**Payment 2016 DKK with 1,9% increase**	**1% 2017**	**Payment 2017 DKK with 1% increase**	**1% 2018**	**Payment 2018 DKK with 1% increase**	**1% 2019**	**Payment 2019 DKK with 1% increase**	**1% 2020**	**Payment 2020 DKK with 1% increase**	**1% 2021**	**Payment 2021 DKK with 1% increase**	**Total increase 2016 - 2021 per share(s)**
1 share	8,000	418,000	4,180	422,180	4,222	426,402	4,264	430,666	4,307	434,972	4,350	439,322	**21,322**
1,5 shares	12,000	422,000	4,220	426,220	4,262	430,482	4,305	434,787	4,348	439,135	4,391	443,526	**21,526**
2 shares	16,000	836,000	8,360	844,360	8,444	852,804	8,528	861,332	8,613	869,945	8,699	878,644	**42,644**
3 shares	24,000	1,254,000	12,540	1,266,540	12,665	1,279,205	12,792	1,291,997	12,920	1,304,917	13,049	1,317,967	**63,967**
4 shares	32,000	1,672,000	16,720	1,688,720	16,887	1,705,607	17,056	1,722,663	17,227	1,739,890	17,399	1,757,289	**85,289**
ICES budget Total 54,5 shares	436,000	22,781,000	227,810	23,008,810	230,088	23,238,898	232,389	23,471,287	234,713	23,706,000	237,060	23,943,060	**1,162,060**

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TABLE 3

Actual and proposed increases in national contributions 2012-2017, including the deficit in the budget

		actual 2012	actual 2013	actual 2014	actual 2015	actual 2016	actual 2017	actual Total		Proposed 2012	Proposed 2013	Proposed 2014	Proposed 2015	Proposed 2016	Proposed 2017	Proposed Total		Diff.
Price for one share (DKK)		410,000	410,000	410,000	410,000	418,000	418,000			428,000	437,000	446,000	455,000	464,000	473,000			
Inflation		0.0%	0.0%	0.0%	0.0%	1.9%	0.0%			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%			
no of shares:		53.5	53.5	53.5	53.5	53.5	53.5			53.5	53.5	53.5	53.5	53.5	53.5			
Belgium	2	820,000	820,000	820,000	820,000	836,000	836,000	4,952,000		856,000	874,000	892,000	910,000	928,000	946,000	5,406,000		-454,000
Canada	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Denmark	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Estonia	1	410,000	410,000	410,000	410,000	418,000	418,000	2,476,000		428,000	437,000	446,000	455,000	464,000	473,000	2,703,000		-227,000
Finland	1.5	615,000	615,000	615,000	615,000	627,000	627,000	3,714,000		642,000	655,500	669,000	682,500	696,000	709,500	4,054,500		-340,500
France	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	1,672,000	9,904,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	1,892,000	10,812,000		-908,000
Germany	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	1,672,000	9,904,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	1,892,000	10,812,000		-908,000
Iceland	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Ireland	2	820,000	820,000	820,000	820,000	836,000	836,000	4,952,000		856,000	874,000	892,000	910,000	928,000	946,000	5,406,000		-454,000
Latvia	1	410,000	410,000	410,000	410,000	418,000	418,000	2,476,000		428,000	437,000	446,000	455,000	464,000	473,000	2,703,000		-227,000
Lithuania	1	410,000	410,000	410,000	410,000	418,000	418,000	2,476,000		428,000	437,000	446,000	455,000	464,000	473,000	2,703,000		-227,000
Netherlands	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Norway	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	1,672,000	9,904,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	1,892,000	10,812,000		-908,000
Poland	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Portugal	2	820,000	820,000	820,000	820,000	836,000	836,000	4,952,000		856,000	874,000	892,000	910,000	928,000	946,000	5,406,000		-454,000
Russia	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Spain	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Sweden	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
United Kingdom	4	1,640,000	1,640,000	1,640,000	1,640,000	1,672,000	1,672,000	9,904,000		1,712,000	1,748,000	1,784,000	1,820,000	1,856,000	1,892,000	10,812,000		-908,000
USA	3	1,230,000	1,230,000	1,230,000	1,230,000	1,254,000	1,254,000	7,428,000		1,284,000	1,311,000	1,338,000	1,365,000	1,392,000	1,419,000	8,109,000		-681,000
Total National Contribution	**53.5**	**21,935,000**	**21,935,000**	**21,935,000**	**21,935,000**	**22,363,000**	**22,363,000**	**132,466,000**		**22,898,000**	**23,379,500**	**23,861,000**	**24,342,500**	**24,824,000**	**25,305,500**	**144,610,500**		**-12,144,500**
Faeroe Islands		328,000	328,000	328,000	328,000	334,400	334,400	1,980,800		335,000	342,000	349,000	356,000	371,200	378,400	2,131,600		-150,800
Greenland		82,000	82,000	82,000	82,000	83,600	83,600	495,200		83,000	85,000	87,000	89,000	92,800	94,600	531,400		-36,200
Total	**1**	**410,000**	**410,000**	**410,000**	**410,000**	**418,000**	**418,000**	**2,476,000**		**418,000**	**427,000**	**436,000**	**445,000**	**464,000**	**473,000**	**2,663,000**		**-187,000**
Total Contributions		**22,345,000**	**22,345,000**	**22,345,000**	**22,345,000**	**22,781,000**	**22,781,000**	**134,942,000**		**23,316,000**	**23,806,500**	**24,297,000**	**24,787,500**	**25,288,000**	**25,778,500**	**147,273,500**		**-12,331,500**

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Description of the ICES advisory system

This document describes the ICES advisory system, including the different categories of advice requests, the handling process for the different types of requests, the resources needed to fulfil the requests, recipients of ICES advice, arrangements for providing advice, as well as overall costs and realized income.

Council is invited to take note that:

- *ICES delivers. We have addressed all except one requests in recent years*
- *ICES advice is appreciated and good feedback is received from recipients*
- *100% cost recovery is not fully implemented. The income from advice covers almost 100% of the direct cost, but only around 80% of the total costs.*
- *The main barriers to realizing full cost recovery of the advisory system are the imbalance between the income and the costs in the MoU with EU and the lack of established agreement for payment of recurrent advice provided to some countries/members*

To work towards the current policy of 100% cost recovery of the total costs it is suggested:

1. *to renegotiate the MoU with EU, to a) increase the payment from EU, b) to reduce the number of advice deliverables under the MoU, or c) a mixture of a) and b), and*
2. *to negotiate MoUs with Member Countries receiving recurrent advice,*

Council is asked to mandate the President to sign the MoU with EU for 2017 as well as to start negotiations with Member Countries on MoUs for recurrent advice deliverables.

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Contents

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1 The different categories of advice requests to ICES

The requests for advice to ICES can be divided into the following categories:

1.1 Recurrent requests

Recurrent requests are those requests for advice which are stated in MoUs and specifying an annual (or in some cases biannual) delivery. The majority consist of advice on fishing opportunities to the EU, NEAFC, NASCO and Norway. ICES on average provides annual advice on more than 225 stocks.

1.2 Special requests

Special requests covers all non-recurrent requests for advice. The category can be separated into two sub-categories, the ones that can be included to the regular Working Programme, and the ones that are an addition to the regular Working Programme.

Special requests, included to the regular Working Programme

This category of special requests for advice covers all non-recurrent requests that can be planned prior to the beginning of each year. These are mostly OSPAR, NASCO, NEAFC, and some DG MARE and DG ENV requests, on very different topics, ranging from common indicators for assessment of seal populations to evaluation of a long-term management strategy for the fisheries on the blue whiting stock. ICES has in recent years annually provided advice on 8 (2015) planned special requests;

Special requests, in addition to the regular Working Programme

This category of special requests for advice are all non-recurrent requests which emerge during the year. These are mainly from the EU (fisheries and environment), NEAFC and ICES member states. Especially as regards EU (fisheries) there has been an increase in the number of unplanned special requests. ICES has during the last three years annually provided advice on 20 (2015) special requests received in addition to the regular working programme.

In the past nearly all requests were recurrent or special requests that could be included to the regular Working Programme. However, in the last 5-10 years the number of special requests arriving during the year has grown and, now, makes a considerable demand on resources. This is not only because of the absolute resource demand (here the recurrent requests for advice on fishing opportunities are still by far the largest) but because the introduction of a new process during the year is much more demanding in terms of planning and implementation. This is because it is about finding marginal resources and timing their use on top of a schedule which is already full for most experts and for the ACOM leaderships and Secretariat time as well.

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Technical services

Technical services[1], provided by the ACOM chair/vice-chairs, as appropriate, and/or the Secretariat under the oversight of ACOM, are in almost all cases the result of requests which are an addition to the regular Working programme.

These services fall into four categories: Technical Assistance; Clarification of Advice; Process services; Review Services.

2 Handling of the different categories of ICES advice requests

The different categories of ICES advice requests are handled as follows:

2.1 Recurrent and special requests included to the regular working programme

For recurrent requests, and special requests, included as part of the regular Working Programme, cf. Section 1 the planning starts with a compilation of requests prior to the ACOM consultations at the Annual Science Conference (ASC). At the ACOM consultation meeting, ACOM will comment on the overall plan for these requests and the generic ToR for the relevant expert groups.

The work plan for the coming year, including venues and timing of expert groups, review groups, advice drafting groups and the ACOM approval web-conferences, is then developed by the Secretariat in close consultation with ACOM leadership and the experts involved. In this process the availability of experts is secured by direct contacts (normally email) between the experts and the professional and assisting secretaries in the Secretariat. The experts involved in this planning are chairs and stock assessors: for each expert group there is a chair or co-chairs elected by ACOM and for each stock a stock assessor is assigned based on last years' programme. The work plan is approved by ACOM prior to the October Council meeting.

The review process for the recurrent advice on fishing opportunities (vast majority of the request under this category) is conducted at the benchmark meetings. In all other cases a review group is established. Before being invited, reviewers are approved by the ACOM leadership. The secretariat is responsible to contact the reviewers.

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1 A technical Service is the provision of scientific information or a process that produces scientific information that policy makers can use. The service may include recommendations made by individual or groups of scientists, but it does not include a recommendation on behalf of ICES (except to reiterate a recommendation previously agreed by ACOM or former ICES Advisory Committees). Read more: http://ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/General_context_of_ICES_advice_2015.pdf

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2.2 Special requests, in addition to the regular Working Programme

For special requests, not part of the regular working programme this starts with the Secretariat receiving information about a potential request from an advice client. The ACOM leadership will then discuss a possible way forward including possible clarifications of the request, the scope, potential experts (normally including the chairs of the relevant expert group and if relevant the stock assessor) and a potential process and timeline. If appropriate and possible the request will be added to an existing process, typically as an extra ToR to an existing expert group. This is generally not possible for special requests with short timelines and where expert groups are already overloaded/already are working according to agreed ToR. The Secretariat will then contact the relevant experts directly and ask for their comments regarding the request, scope, data needs, their availability and process. These questions are then resolved through a – quite often extensive – email correspondence between the experts and the Secretariat. Once experts have agreed to a process and timeline, the Secretariat sends a letter to the advice client explaining (if relevant) proposals for rewording of the request, the planned scope, the process including expert involvement and timeline, and a budget. The advice client will then return with a letter of acceptance or questions for further clarification. When a final letter of acceptance has been received the process is confirmed to the experts and the process is initiated. Needs for adjustments underway are frequent, mainly due to lower expert availability than they had confirmed in the planning stage. In some cases adjustments also become necessary because data or models turn out to behave differently than assumed and a different approach must be taken.

Securing expert availability for the review process in case of requests not part of the regular working programme is challenging given short deadlines.

2.3 Technical services

The process to organize a technical service is similar to a special request approach. However, in this case the ACOM leadership will identify what type of technical service will be used: i) technical assistance; ii) clarification of advice; iii) process services; iv) review services. In case of the latter the Secretariat will identify reviewers to be approved by the leadership.

3 Resources needed to fulfil advice requests

Expert availability is presently evaluated by direct contact between the Secretariat and the relevant experts. In most cases the chairs of the relevant expert groups and national ACOM members are involved. ICES has presently no formal contact to those in charge of overall resource planning at the host institutes in this process. It is anticipated that the experts and ACOM members check any resource availability issues at national level.

To support the resource allocation issue the Council in 2014 decided to establish the ICES Resource Coordination Tool (RCT):

- to give resource managers a better overview of which expert resources are needed and used in ICES work, with a possibility to plan and prioritise the use of limited resources;

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- to make information on commitments and timing of these more accessible throughout the year, for both the resource manager and the expert, and also allowing an end-of-the year overview of how resources have been used;

- to allow individual ICES experts to contribute additional information about their personal skills and expertise to the ICES resources database, and in that way ease the overview of available experts with specific skills, of relevance for both scientific and advisory work.

4 Recipients of ICES advice, arrangements for providing advice, overall costs and realized income

4.1 Recipients of ICES advice

Currently, there are five main recipients of ICES advice:

1. European Union (EU)

2. ICES Member Countries

3. North Atlantic Salmon Conservation Organization (NASCO)

4. North East Atlantic Fisheries Commission (NEAFC)

5. OSPAR Commission

Requests from HELCOM are not regular, and are to a large extent conducted as part of HELCOMs externally financed projects.

4.2 Arrangements for providing advice

Most of the advice arrangements are laid down in Memoranda of Understanding between ICES and the recipient of advice. The MoUs describe the advice deliverables and the costing. All recipients have accepted ICES 100% cost recovery policy.

Below is a more specific description of the MoUs with the different ICES advice recipients.

European Union

ICES has an annual MoU with EU that outlines the working arrangements in a given year. The MoU defines deliverables for recurrent advice requests, including a list of stocks covered by the recurrent advice requests and ICES support to the EU data collection, which includes the maintenance of the DATRAS and RDB databases. The MoU, also, defines procedures for special requests. Within the European Commission there are two main recipients of the advice: DG MARE (Maritime Affairs and Fisheries) and DG Environment.

Although the EU MoU with ICES concerns all EU institutions, the recurrent advice requests only concern DG MARE. The MoU contains a detailed description of the costing of recurrent advice:

- honorarium of ACOM leadership ;
- advisory staff ;

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- staff to support the EU Data Collection Framework ;
- staff working on DATRAS and RDB maintenance ;
- travel costs and per diem of Advice Drafting Groups, Review Groups and benchmark chairs and external reviewers ;
- honorarium of reviewers;
- cost of training course of DG MARE officials ;
- cost of the annual ACOM meeting (travel and per diem of the ACOM members) .

EU pays all eligible costs within a maximum of 10.4 million DKK, equivalent to approximately 1,4 million euro, for recurrent advice.

For special requests from DG MARE, EU only pays marginal costs in the form of travel and *per diem* for the experts attending Advice Drafting and Review Groups. Secretariat and ACOM leadership costs including overheads are assumed covered by the payment for recurrent advice.

For special requests from DG Environment payment covers salaries/honorarium, including overhead for secretariat staff and ACOM leadership, as well as honorarium for experts, and travel/*per diem*.

The recurrent advice is essentially single stock advice, by-catch including seabirds and mammals, and impacts on bottom habitats. The budget for recurrent advice also includes costs in support of the EU Data Collection Framework Regulation (ICES databases: DATRAS-fisheries independent data, and RDB-fisheries dependent data), and training courses organized for DG MARE staff, and other stakeholders.

ICES Member Countries

On request, ICES provides recurrent/special request advice to ICES Member Countries.

The costs claimed for recurrent/special request advice to Member Countries covers marginal cost of the advisory process (i.e. travel and per diem of experts), and the respective salary time of ICES staff and ACOM leadership, including overhead.

A MoU between Norway and ICES has been concluded, for the provision of recurrent and special request advice, including aquaculture topics. The annual payment under the MoU covers recurrent advice delivered to Norway in the Barents Sea and the Greater North Sea ecoregions, which consist of:

- honorarium of ACOM leadership;
- advisory staff;
- travel costs and per diem of Advice Drafting Groups, Review Groups and benchmark chairs and external reviewers;
- cost of the annual ACOM meeting (travel and per diem of the ACOM members).

Special requests are subject to separate costing.

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North Atlantic Salmon Conservation Organization (NASCO)

The MoU with NASCO was last updated in 2007. The MoU defines recurrent advisory deliverables and the process for special request advice.

In accordance with the MoU NASCO pays a fixed annual price for the recurrent advice, DKK 535.741 in 2015, and 100% of the costs, including overheads of special request advice. In 2015 NASCO paid for the following cost categories:

a) Standard (recurrent) advice (i.e. advisory staff salaries)

b) ACOM Leadership

c) Quality assurance (i.e., review and advice drafting)

d) Special advice request 100 % of costs (eligible costs are specified in the MoU and includes overhead)

The recurrent advice is essentially an assessment of the status of salmon stocks, including an overview of conservation and management measures in the North Atlantic, as well as in the areas of the three regional commissions (North American Commission, West Greenland Commission, and North East Atlantic Commission).

North East Atlantic Fisheries Commission (NEAFC)

The MoU with NEAFC was last updated in 2007. The MoU defines recurrent advisory deliverables and the process for special advice requests.

The financial agreement with NEAFC is similar to the one with NASCO. NEAFC pays a fixed annual price for the recurrent advice and 100% of the costs of special request advice. The MoU identifies eligible costs. Overheads are included. The MoU does not specify an allocation of the fixed price to activities. The total amount paid by NEAFC was in 2015 2.3 million DKK.

The recurrent advice is essentially single stocks advice and advice on Vulnerable Marine Ecosystems (VMEs).

OSPAR Commission

ICES MoU with OSPAR was last updated in 2007. The MoU defines a) scientific information and advice and b) data handling activities. Specifications of these two items are agreed annually, with a trend lately to increase the amount allocated for data services. There are no recurrent advice requests. The special advice requests, included to the regular working programme cover a range of different issue, from fishing intensity and pressure mapping to validity of data used for indicators in assessments.

OSPARs payment is agreed annually pending on the activities agreed. The budget calculation includes:

i. ACOM leadership/meeting and Secretariat staff salaries;
ii. Travel and per diem of experts involved in the review and advice drafting;
iii. Travel of ACOM leadership and ICES secretariat staff to attend OSPAR meetings (agreed in advance);
iv. Overheads.

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HELCOM

The MoU with HELCOM was last updated in 1999. The MoU defines scientific information and advice, and includes overheads. A separate data handling contract is agreed, normally with a three-year time-span.

The same principles as outlined above for Member States (with the exception for the recurrent process for Norway) have been implemented for HELCOM advice requests.

4.3 Overall costs and realized income for the ICES Advisory system

The tables below shows the realized income and the actual cost for the delivery of recurrent advisory products (2015 figures), including data services, as well as the estimated figures for 2016.

Table 1 Overview of realized income and costs for recurrent advice, in million DKK – for 2015

Client	Income	Direct costs	Indirect costs	Total costs	Balance
EU	10,4	12,0	2,5	14,5	- 3,9
NEAFC and NASCO	2,9	2,5	0,6	3,1	-0,2
Total	13,3	14,5	3,1	17,6	-4,1

Table 2 Overview of estimated income and costs for recurrent advice, in million DKK – for 2016

Client	Income	Direct costs	Indirect costs	Total costs	Balance
EU	10,4	11,8	2,0	13,8	- 3,4
NEAFC, NASCO and Norway	3,7	3,0	0,6	3,6	+0,1
Total	14,1	14,8	2,6	17,4	-3,3

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International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

Agenda item 3.3

CM 2016 Del-3.3

ICES participation/lead on future Coordination and Support Action (CSA) projects

The Council is asked to approve an ICES pro-active pursuance of participation or lead in future Coordinated and Support Action (CSA) projects. This request is based on the value added of previous and current engagements in CSAs projects and the possibility of further international science cooperation enhancement.

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1) Existing projects with ICES involvement

Acronym	Title	Duration
AORAC-SA	Atlantic Ocean Research Alliance Coordination and Support Action	2015-2020
AtlantOS	Optimizing and Enhancing the Integrated Atlantic Ocean Observing System	2015-2019
BlueBRIDGE	Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth	2015-2017
ClimeFish	Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change	2016-2019
COFASP	Strengthening cooperation in European research on sustainable exploitation of marine resources in the seafood chains	2013-2016
COLUMBUS	Monitoring, Managing and Transferring Marine and Maritime Knowledge for Sustainable Blue Growth	2015-2018
BalticBOOST	Best practices for action plans to develop integrated, regional monitoring programmes, coordinated programmes of measures and assessing data and knowledge gaps in coastal and marine waters	2015-2017
DG MARE	Strengthening regional cooperation in the area of fisheries data collection in the North Sea and Eastern Arctic	2015-2016
EMODnet Biology II	European Marine Observation and Data Network	2013-2016
EMODnet Chemistry II	European Marine Observation and Data Network	2013-2016
EMODnet INGESTION	European Marine Observation and Data Network	2016-2019
ETC ICM	The European Topic Centre on Inland, Coastal and Marine waters	2014-2018
GEF LME COP	Strengthening Global Governance of Large Marine Ecosystems and Their Coasts through Enhanced Sharing and Application of LME/ICM/MPA Knowledge and Information Tools	2016-2019
HELCOM TAPAS	Development of HELCOM tools and approaches for the Second Holistic Assessment of the Ecosystem Health of the Baltic Sea	2016-2017
MareFrame	Co-creating Ecosystem-based Fisheries Management Solutions	2014-2017
SeaDataCloud	Further developing the pan-European infrastructure for marine and ocean data management	2016-2020

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2) Upcoming possibilities in H2020 2016-2017 Work Programme

No.	Title
SFS-20-2017	Towards a science-based regionalisation of the Common Fisheries Policy
SFS-21-2017	Advancing basic biological knowledge and improving management tools for commercially important fish and other seafood species
SFS-22-2017	Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector
SFS-32-2017	Promoting and supporting the eco-intensification of aquaculture production systems: inland (including freshwater), coastal zone and offshore
BG-1-2016	Large-scale algae biomass integrated biorefineries
BG-2-2016-2017	High value-added specialised vessel concepts enabling more efficient servicing of emerging coastal and offshore activities
BG-3-2016*	Multi-use of the oceans marine space, offshore and near-shore: compatibility, regulations, environmental and legal issues
BG-4-2017	Multi-use of the oceans' marine space, offshore and near-shore: enabling technologies
BG-5-2016	ERANET Cofund on marine technologies
BG-6-2017*	Interaction between people, oceans and seas: a strategic approach towards healthcare and wellbeing

*Coordination and Support Action

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3) Discussion on ICES pro-active participation in CSAs

During the Statutory Meeting in October 2015, the Council Working Group ICES Business Model (CWGIBM) recommended that ICES and the Secretariat should have a proactive participation role in Coordination and Support Action (CSA) projects that are aligned with the ICES Science Plan (ISP). The basis for this recommendation is that previous participation has been proven positive in e.g. FP7 MARCOM (integration of marine and maritime research stakeholder organizations) and the Atlantic Ocean Research Alliance (where ICES supports the Commission, NOAA and the DFO in transatlantic and Arctic research programming).

Following the recommendations by Council, the Secretariat explored the possibility to participate in EU Coordination and Support Actions, and found that in the short-term the potential to lead a project was not possible, due to already established consortia. The Bureau (2016) noticed that in the longer-run ICES could have more impact on call texts and coordination of research programming and could increase its effort in the H2020 and its successor programme. Proactive project participation should consider running processes that assure information exchange between ICES member countries but also respecting confidentiality. This should be part of the mandate of the new SCICOM Chair.

4) Conclusion

Coordination and Support Actions are usually addressed to international organizations, rather than individual institutes. Their focus is placed on science support, e.g. coordination of research, transfer of knowledge, science communication and creation of multi-stakeholder fora. All the above mentioned BG calls include training / education components. The next H2020 work programme (2018-2020) and its successor programme is likely to include more marine-related CSAs, including those of ICES strategic importance, like coordination of research programming and multi-sectoral contribution to strategic research agendas in the Baltic and the North Seas.

The Council is asked to approve an ICES pro-active pursuance of participation or lead in future Coordinated and Support Action (CSA) projects. This request is based on the value added of previous and current engagements in CSAs projects and the possibility of further international science cooperation enhancement.

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ICES and Ecosystem Based Management

ICES has been approached recently to describe our current approach to EBFM and EBM. The following document has been prepared to say where we are in implementing EBFM and EBM. It is proposed to include this as an annex to Book 1 of the ICES Advice books.

The document was created by the ICES Council Working Group on MSFD and Ecosystem Approach, the ACOM leadership and the ICES secretariat (Ecosystem Focus Group).

Ecosystem Based Management (EBM)

Ecosystem Based Fisheries Management (EBFM)

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ICES and Ecosystem Based Management

The ecosystems approach to management of marine activities has been described by many organisations and in legislation (FAO, CBD, Arctic Council, NOAA, CFP, MSFD). ICES sees Ecosystem Based Management (EBM) as the primary approach for the management of the human activities affecting the ecosystems and Ecosystem Based Fisheries Management (EBFM) as a constituent part of the management addressing the fishing sector. Certain key words illustrate the central tenet of the ecosystem approach: management of human activities, consideration of collective pressures, achievement of good environmental status, sustainable use, optimize benefits among diverse societal goals, trade-offs and stewardship for future generations.

ICES role is to provide the evidence for ecosystem based decision making for the management of fisheries and other sectors in the ICES area. The evidence is required to explore the consequences of likely trade-offs (central to EBM) in the management of, and between sectors, and their impacts and services from the biodiversity of species and habitats. This is to support sustainable development aimed at both human and ecosystem well-being and stewardship of marine ecosystems. EBFM should result in fisheries management that maintains resilient and productive ecosystems. ICES can provide the knowledge base to achieve this end, as encapsulated in the ICES mission of providing the "information, knowledge, and advice on the sustainable management of human activities affecting, and affected by, marine ecosystems."

EBM is a process towards this goal, and ICES is incrementally using its network, data centre, and advisory role to provide the scientific basis for operational management. As the process is incremental, it allows ICES to respond appropriately to the changing demands of a developing policy landscape.

Evidence Base and Tools

Since 1992, the ICES Working Group on Ecosystem Effect of Fishing Activities (WGECO) has considered the framework and application of EBFM. Its outputs have been, and continue to be, transformative with the working group continuing to provide leadership on the development of the concepts, such as those underlying the European Marine Strategy Framework Directive (MSFD). The understanding then propagates throughout the ICES network facilitating the development of the knowledge required to provide relevant and timely operational advice.

Through the ICES data centre and with strategic partners, ICES is also providing operational information products to underpin the exploration of what can be called the safe-operational space for trade-offs. The ICES data centre is leading European initiatives to improve collaboration between fisheries/resource management researchers and conservation/biodiversity researchers by building common vocabularies and data sharing between organisations such as FAO fisheries, EUROSTAT and OBIS (Ocean biogeographic information system). It is also working with the ICES working groups on marine spatial planning, habitat mapping, and fisheries spatial data to make the provision of spatial data consistent across various data sources, to enable clear and traceable provenance of information for decision making.

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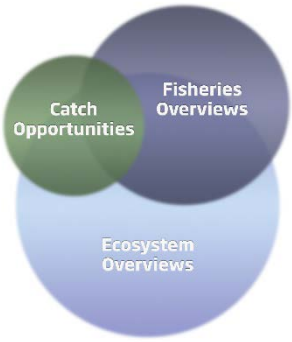
The ICES integrated ecosystem assessment groups are developing methods and tools to make the ecosystem approach operational. Their ecosystem assessments include ecosystem trend analyses, the building of Bayesian networks and methods to qualify, quantify and prioritise regional anthropogenic pressures. The impact of climate change on marine ecosystems and fishers, from the Baltic Sea, or Barents Sea across to Georges Bank in the western Atlantic is a key issue that ICES builds into its consideration.

Application of evidence base to EBFM



ICES uses three building blocks to deliver EBFM within EBM; advice of fishing opportunities, fisheries overviews, and ecosystem overviews. These blocks are continually developing to address the challenges of ecosystem dynamics, legislative changes, and changes in the drivers of fisheries. Spatial management and regional priorities are dealt with through all of the advice being given by ecoregion. The ICES ecoregions are bio-political in nature, reflecting the realities of the bio-geography of the marine ecosystems and the management of those ecosystems through national and regional authorities.

ICES advice on fishing opportunities has evolved from the traditional focus on single species catch options. It now includes an assessment of the stock status, the exploitation rate in relation to maximum sustainable yield, and projections of the consequences of fisheries actions for each stock impacted by fisheries in the European ICES area. The assessments are a mixture of analytical and knowledge limited (proxy) approaches which encompass target species, bycatch species, deep sea and elasmobranch fisheries. Where evidence exists of productivity changes in the ecosystem or fish stocks, researchers are encouraged to consider the evidence and implications for management of these changes. ICES advises on fishing opportunities using advice rules (harvest control rules in management plans/strategies) with reference points that reflect policy objectives (Maximum Sustainable Yield, Precautionary Approach). This advice informs of the consequences of catches to meeting agreed objects for fish stocks. The ecosystem approach is integrated in the reference points, which are based on the current state of the ecosystem and updated to reflect any ecosystem impacts on stock dynamics. Where appropriate, such as with forage fish, or cannibalistic fish, estimates of the temporal variation of natural mortality are built into the stock assessments to consider the implications for fish for top predators, or density effects on stock dynamics.

The fisheries overviews are summaries of the activities and impacts of fishing fleets in the ICES area. They describe the fleets operating in each ecoregion, the composition of their catches, and their interactions with the ecosystem, thus documenting the goods and services derived from fishing. The ICES mixed fisheries considerations, which describes the consequences and options for management of mixed fisheries are part of these overviews. Mixed fisheries advice highlights the difficulty of reconciling the objective of maximum sustainable yield for all stocks and addresses the trade-offs between different management strategies. ICES has developed methods to include information on the impact of fisheries on the sea bed and the impact of bycatch of endangered, protected, or threatened species within the fisheries overviews. The fisheries overviews also describe the multispecies dynamics in each ecoregion, with fishing fleets interacting with variable fish community compositions.

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Building the evidence base for EBM

The ecosystem overviews put fishing activities into the context of the trends and status of the marine ecosystem as a whole. The ecosystem overviews use qualitative methods to identify and focus on the top five priority human activities and resulting pressures that can be locally managed within each ICES ecoregion. ICES is currently developing quantitative methods to further assess these pressures. In many ecoregions, ICES considers that fishing contributes major anthropogenic pressures on the ecosystems. The approach of assessing activities, pressures, and state of the ecosystem provides the flexibility to monitor for cumulative effects of the pressures on the ecosystem. ICES is working with the regional sea commissions, OSPAR, HELCOM and ICES Member Countries to keep these overviews relevant to the knowledge needs of management.

In addition to these three blocks, ICES is regularly asked to provide bespoke advice on issues relating to EBFM and EBM, e.g. estimating ranges of maximum sustainable yield, pressure maps of fishing, assessing the status of information poor stocks, monitoring recreational fishing, assessing biodiversity of seals and cetaceans, commenting on the impact of aquaculture. ICES hosts and maintains the impulsive noise register, marine litter datasets (collected in conjunction with ICES coordinated surveys), a biodiversity portal (aimed at seals and bird populations) and the North Atlantic Vulnerable Marine Ecosystem (VME) portal which all provide a valuable resource to our partner environmental and fisheries organisations. They also facilitate the production of advice that are integrated into the overall framework for EBM in a strategic and responsive manner.

Engagement with society

People are central to EBM. Any process that engages with society needs to be transparent, adaptive, and inclusive. The evidence base and methodologies used by ICES to provide knowledge products are openly documented and available in the highest resolution that the underlying data sources allow. All major new innovations and advice are reviewed by independent experts. In addition, ICES processes are open to observer participation and training courses are offered to build the capacity needed to understand the science advice. ICES works hard to ensure the legitimacy and credibility of its advice. The "benchmark" is now widely used throughout ICES to enable stakeholder input into method development and knowledge acquisition. Industry/science partnerships feed information through to ICES products. ICES has working groups looking at the provision of goods and services, and its strategic initiative on the human dimension challenges ICES and its partners to incorporate trans-disciplinary approaches to the provision of knowledge for society. ICES also liaises with international bodies (such as regional advisory councils) and research projects to maintain relevance. ICES seeks to ensure that the provision of knowledge remains independent and yet also open and challengeable.

Summary

In the ICES Strategic Plan 2014-2018, ICES is committed to building a foundation of science around one key challenge: integrated ecosystem understanding. Part of this integrated approach is the implementation of EBM as a continuous and iterative process. The principles of EBFM and EBM are clear, and are being incorporated into every facet of ICES work across its data, science, and advisory

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programmes. EBM requires ICES to consider broader issues, where the impacts of marine sectors intersect and society needs information on trade-offs between such activities and with marine ecosystems. Regular reviews of progress are made to ensure the momentum of incorporating EBFM and developing methods for EBM are being maintained.

Prepared by Council Steering Group on MSFD & Ecosystem Approach, ACOM leadership and ICES secretariat.

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Council Meeting
October 2016
CM 2016 Del-4
Agenda item 4

Report from the Chair of Council Strategic Initiative on the MSFD-Ecosystem Approach (CSIMSFD-EA)

This document provides Council with a summary of progress since last year's meeting.

At Council 2015 it was agreed to broaden the mandate of the group to include the Ecosystem Approach, as well as the Marine Strategy Framework Directive and to change it from a Council Steering Group to a Council Strategic Initiative.

The group met twice since last year, 1st April 2016 and 22nd September 2016 at the ASC. Minutes of these meetings are available on the group's Sharepoint site. Attendance at these meeting tended to be predominantly SCICOM/ACOM Leadership and the Secretariat.

In line with the discussion at last year's Council meeting, the group attempted to take a more strategic approach than in previous years. This means that the group did not undertake specific tasks itself but sought to identify MSFD/EA issues that needed to be addressed or that required better coordination or promotion both within ICES itself or with outside organisations. Using the CSIMSFD-EA in this manner, and also as a mechanism to bring issues of strategic importance to Council for discussion, was supported at the ASC meeting and would appear to be the most efficient approach for this Strategic Initiative.

Issues considered/addressed by CSIMSFD-EA during the past year:

ICES–EFARO initiative on Integrated Surveys.

This is a proposal by ICES and EFARO to explore the possibilities of streamlining the use of research vessel surveys to collect data for MSFD and CFP by way of three desktop pilot studies. DGMare support the initiative in principle but were not in a position to allocate funds and considered this to be an issue for Regional Coordination Meetings (RCM) established under the DCF.

ICES and EFARO are exploring ways to progress this with the RCM. CSIMSFD-EA strongly supports this initiative and, other than keeping Council informed, has no specific actions identified.

Action: Council to take note.

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DATRAS and OSPAR 2017 Intermediate Assessment.

Using DATRAS data OSPAR has developed quality assured Groundfish Survey Monitoring and Assessment data products (GFSM&A DP) for use in the derivation of indicators for assessing Good Environmental Status for the Marine Strategy Framework Directive. An R-script and full documentation has been prepared by Marine Scotland to identify inconsistencies in DATRAS. During this process inconsistencies were identified to Member States' Data Providers. Data Providers have correct their DATRAS inputs or have provided corrected data to OSPAR.

Marine Scotland, the ICES Data Centre, the Data and Information Group and Steering Group on Integrated Ecosystem Observation and Monitoring are working collaboratively to align the two data sets.

ICES continues to develop the Large Fish Indicator (LFI) and these will be included in the Ecosystem Overviews.

Action: Council to take note and thank Marine Scotland for their work.

Benthic –fishing pressure / impact.

On foot of requests from DGEnv, considerable progress has been made on developing and evaluating indicators for assessing pressure and impact on the seafloor from bottom-contacting fishing. ICES, building on the work from the EU FP7 BENTHIS project, will progress this work in 2017.

The intention is to be in a position to provide advice that will be quantitative, measurable, facilitate cumulative pressure assessments and will be ecologically meaningful.

This will be a very important step forward and should facilitate regional coherence in the assessment of seabed impacts.

Action: Council to take note.

ICES and Ecosystem Based Management.

The Ecosystem Overviews for the Barents Sea, Bay of Biscay and Iberian Coast, Celtic Seas and Greater North Sea have been published and the Fisheries Overviews are being prepared. CSIMSFD-EA considered it important that OSPAR, HELCOM, the EC and member countries be aware of these products and the work of ICES relating to ecosystem based management.

It was agreed that a short communication be prepared to inform MSs, RSCs, EC and relevant bodies of the ecosystem and fisheries overviews. This will highlighting the potential for development of additional products and to promote the ongoing work of ICES.

Doc. Del. 4.1 "ICES and Ecosystem Based Management" fulfils this requirement and will be presented to Council.

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This document will be published as part of the introduction to advice and will also be developed into an outreach product by Secretariat communications for use at *inter alia* at CBD.

Action: Council to take note and comment as appropriate

Preparation for future requests and policy needs.

At its September meeting CSIMSFD-EA discussed how best to position ICES to be prepared for the future MSFD-EA policy developments and to be ready to influence these from a scientific perspective.

A discussion on the long-term science needs to respond to future policy developments with recipients of advice at the MIRIA meeting was considered to be a useful approach. Such discussions needs to be focused and the Group agreed that it could prepare a discussion document on how trade-off, risks and spatial measures could be integrated into fisheries measures and management plans. The views of the incoming SCICOM, ACOM and SSG Chairs could be sought on such a document. It is worth noting that the EEA has initiated a 2022 horizon scanning process.

Action: It would be useful to have the views of Council on the MIRIA approach proposed above and any other ideas on how ICES could position itself to influence the future development of the Ecosystem Approach. This would inform the work of CSIMSFD-EA for the next year.

Chair of CSIMSFD-EA

Action: A new Chair for the Group needs to be identified.

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Atlantic Ocean Research Alliance Coordination and Support Action

The following report is provided for Council's information.

ICES is represented by the General Secretary in the operational board of the Atlantic Ocean Research Alliance Coordination and Support Action.

ICES leads three work packages under the Atlantic Ocean Research Alliance Coordination and Support Action: Aquaculture, ecosystem approach to ocean health and stressors, knowledge sharing platforms. Detailed information is available online: http://ices.dk/explore-us/projects/Pages/AORA-CSA.aspx

A short overview on the progress of the work packages is provided below:

Work Package 4: Ecosystem Approach to Ocean Health and Stressors

ICES Lead: Mark Dickey-Collas

AORAC-SA WP4 is tasked with supporting the trilateral group (EU/USA/Canada) on ocean stressors/ecosystem approach, with input from the EU Horizon2020 projects under BG1 "Improving the preservation and sustainable exploitation of Atlantic marine ecosystems".

The objective is to provide the EU-USA-Canadian Atlantic Ocean Research Alliance with relevant and responsive information on the status of Ecosystem Approach (EA) research in Europe. As well as to create and support the Transatlantic Trilateral Working Group on "Ecosystem Approach to ocean health and stressors" with implementing its roadmap in order to enable and develop ecosystem approach to ocean management in the EU, Canada, and USA.

Work in 2016 has included various scoping meetings, and a joint workshop on the status of science for operationalising the ecosystem approach, as well as synthesizing the report and other outcomes from the workshop. The 2017 work plan is in development but emphasizes engagement with stakeholders.

Work Package 7: Aquaculture

ICES Lead: Wojciech Wawrzynski

AORAC-SA WP7 is tasked with supporting the trilateral group (EU/USA/Canada) on aquaculture.

The objective is to provide the Atlantic Ocean Research Alliance with information on the status of aquaculture research in Europe relevant to scientific and industry needs in the North Atlantic; to map and assess the connectivity of on-going aquaculture research activities and programmes in Europe; and to support the Transatlantic Trilateral Working Group on Aquaculture with implementing its

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roadmap in order to enable and develop sustainable aquaculture in the EU, Canada, and USA.

In 2016 the WP has concluded work on the 'Inventory of major Canadian, European and US aquaculture research activities/projects' and defined aquaculture themes of common interest, as a part of its 'roadmap'. Work in 2016 included workshops of the WG with theme leaders in order to define thematic scope of themes. The plan for 2017 is to finalize the roadmap, together with a short-term work plan, per each theme.

Work Package 11: Knowledge Sharing Platform

ICES Lead: Neil Holdsworth

AORAC-SA WP 11 is tasked with establishing a long-term knowledge sharing platform (KSP) in research priority areas (Ocean literacy, Seabed and Benthic Habitat Mapping, Ecosystem Approach to Ocean Health and Stressors, Ocean Observation, Aquaculture, Marine Biotechnology).

The objective is to allow for long-term usability of the data, information and knowledge products thereby generating real value from the investment in infrastructure. The aim is to include a classification system, which allows for a simple, focused and reliable use and analysis of the information made available through the knowledge platform.

Work in 2016 has included making progress on a European catalogue of projects/portals with data/information products and their relevance to knowledge sharing platform. The work package is waiting on further information about working group membership. The work plan for 2017 is to arrange a physical meeting to draft a shared (EU-US-CA) vision of what a KSP should comprise.

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ICES SCIENCE COMMITTEE

ICES CM 2016 Del-7.1.1/
SCICOM:03

REF. COUNCIL

SCICOM Progress Report 2016

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
CIEM
Conseil International pour l'Exploration de la Mer

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1 Introduction (SCICOM Chair)

The SCICOM Annual Report to Council reviews the activities of the ICES science structures in their efforts to implement the Science Plan (2014–2018). The role of SCICOM is to ensure that ICES is a relevant, credible and respected marine science organization via a visionary, strong and active science agenda.

The report follows the structural mechanism that SCICOM utilizes to deliver the Science Plan, including:

- Science Steering Groups –strategically manages the Expert Group portfolio that ensures delivery of the science needed to implement the ICES Science Plan but also accounts for bottom up developments and initiatives.
- Strategic Initiatives – introduction or development of new areas including interdisciplinary and crosscutting cooperation.
- Operational Groups - develops policies and access mechanisms on data and publications to meet the scientific needs of the organization and ensures consistent data, publications and communication strategies and products. Develops a high level training programme of global interest to the marine science community
- The Annual Science Conference – provides a modern and adaptive venue for the ICES community and partners to meet and strategically discuss their science, and to bring new participants into ICES activities.

The SCICOM annual report to Council also includes the midway review on ICES Strategic Plan provided by the Coordination Group.

1.1 ICES Science Development – The ICES Science Plan (Yvonne Walther)

1.1.1 Summary of progress on the Plan Objectives and Goals

SCICOM addresses two goals under the ICES Strategic Plan:

- Develop an integrated, interdisciplinary understanding of the structure, dynamics, and the resilience and response of marine ecosystems to change;
- Understand the relationship between human activities and marine ecosystems, estimate pressures and impacts, and develop science-based, sustainable pathways.

To ensure the fulfilment of these goals SCICOM oversees a number of supporting activities which are effectuated by the mechanisms described in the introduction and reported below. In addition the crosscutting effects of the work done by Advice, Data and Information, and Secretariat have been highly benefitted from the creation of the Coordination Group. Several productive initiatives have sprung out of this cooperation including among others, the midway report on ISP and opening plenary session in ASC as a joint venture between three ICES pillars, see 2.1 below. The coordination group has created a vision document that covers the summary of progress on the ICES ISP therefore only some main points are covered in this summary of progress.

As reported below in 1.1.2 the progress of the Science Plan implementing the goals is progressing steadily. To facilitate further development some particular focal areas have been identified.

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- Ensure availability of experts in ICES Science Community including aquaculture, bluewater and other oceanographers – identify and fill gaps
- Continue to build an operative platform for social sciences in support of IEA.
- Develop online training facilities.
- In cooperation with data and advice, advance the data flow from producer to end user.

1.1.2 Implementation of ICES Science Plan – Performance Measurement

The Performance measure of the implementation of the Science plan was done by an expert evaluation performed by the SSG chairs of the 31 priority areas in the Science Plan. The result of the evaluation is shown in the tables in **Annex 2.** The evaluation shows good overall progress and increased scores in 16 areas (marked in green in the table). Priority areas scoring some progress to doing well (3-5) are 22 (16 in last evaluation) and areas scoring 4–5 are 11 (4 in last evaluation).

Areas with little progress scoring 1–2 are 8 (14 in last evaluation). To stimulate progress in the last period of the Science plan (2016–2018) attention should be given to the 8 lowscoring areas and see why the score is low. Below follows a short review of the low scoring areas gives a vision on how to proceed.

Three areas (2, 12 and 14) that score 1–2 would have had higher scores if evaluated across the SSGs. More focus can be given to area 2 but in that case Expert Groups need to be encouraged to do comparative work.

2. Quantify the nature and degree of connectivity and separation between regional ecosystems

12. Develop approaches to mitigate impacts from these activities, particularly reduction of non target mortalities and enhancement/restoration of habitat and assess the effects of these mitigations on marine populations

14. Evaluate ecological, economic and social trade offs between ecosystem protection and sustainable use to advise on management of human activity in marine ecosystems

8. Define and quantify north Atlantic Ecosystem Goods and Services, model their dependence on ecosystem processes and habitat condition and their social, economic and cultural value (score 1) – an area which we should give more focus, perhaps a future action area.

7. Develop end to end modelling capability to fully integrate natural and anthropogenic forcing factors affecting ecosystem functioning (score 2, previously 1) One explanation is that this is not a focal area in the community, whereas it was found interesting to include in the Science Plan some years ago, few are working on end to end models but more moving towards adaptive modelling to address specific scientific and managerial issues.

21. Conduct pilot studies in data rich areas for alternative IEA approaches, linking quantitative and qualitative methods at appropriate spatial and temporal scales (score 2, previously 1)

23. Use IEA's to informing management about the effects of cumulative pressure and additive and non additive impacts, and which provide risk evaluations and analyses of tradeoffs between sectoral objectives. (score 2, previously 1). Progress has been made in both areas yet the key success lies in a long term effort in both cases. Area 21

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will likely develop in the right direction given enough time. Area 23 is a very complex issue, highly depending on the cooperation with management, which has shown little progress and should be a strategic focus from both science and advice .

27. Identify knowledge and methodological monitoring gaps and develop strategies to fill these gaps (score 2) – several initiatives to address this issue have been taken, including approaching EFARO with an initiative to create an overarching sampling programme. Progress has been slow since this area is mainly outside the ICES mandate. It is possible to identify the knowledge and gaps but setting the strategic priorities is outside ICES scope. Success of further implementation is based on the cooperation with Member States to develop monitoring strategies.

Based on the summary above the performance evaluation is considered to be conservative in some cases where the progress is in fact more extensive, in other cases lack of progress can be identified as lack of initiatives or even depend on external factors. By identifying the major obstacles for the 8 areas that scores 1-2 there is a good indication that further progress can be made.

A more extensive mapping of the implementation started in 2015 by initiative of SCICOM. In this living document the Science Priority areas are mapped against the Terms of Reference of the Expert Groups regardless of affiliation to SSG. Therefore crosscutting effects are clearer and give a fuller picture of the implementation of the Priority Areas. The mapping is available as a background document.

1.1.3 ICES Action Areas – Aquaculture and Arctic

Aquaculture

Products from Action Area Aquaculture include advice to NASCO on the possible effects of salmonid aquaculture on wild Atlantic salmon populations, focused on the effects of sea lice, genetic interactions and the impact on wild salmon production. A special theme session on this topic took place during the NASCO annual meeting in June 2016.

Aquaculture overviews: Following the 2015 Aquaculture Dialogue Meeting the idea came up to develop a SCICOM-owned, and ACOM-approved, Aquaculture Overviews, similar to the Fisheries Overviews. SCICOM requests nominations of Aquaculture contact points for the purpose of the AORACSA aquaculture work and for the aquaculture overviews.

SCICOM had a strategic discussion at its meeting during the ICES ASC on 24 September 2016 on the WGAQUA role in the ICES system and the way forward. Despite several meetings with the leadership of WGAQUA, no consensus was reached on how the group relates to the ICES system of science and advice. It was decided at the SCICOM September meeting to close WGAQUA in its current form and initiate an internal scoping process with the aim to develop a long-term strategy on Aquaculture, including the internal setup of the working group(s) to support this strategy.

H2020 Atlantic Ocean Research Alliance (AORA-CSA): - Work on the trilateral inventory of aquaculture collaborations / projects has been finalized; - Roadmap for the Trilateral AQ WG: agreed to be a somewhat stable document reviewed every 3-5 years; For each of the 8 priority topics, a work plan will be structured around 4 objectives (Sharing information and knowledge though transatlantic workshops; Existing relevant projects; Developing new Galway related aquaculture projects/programmes with

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Canada/EU/US collaborators; Initiating exchange programs for students and post-docs). To be completed by the theme leaders and AORA WP7 by January 2017.

SCICOM discussed NPAFC / NASCO International Year of the Salmon and agrees that ICES should take part in setting the science agenda.

Arctic

WGICA (Integrated Assessment for Central Arctic Ocean) has established two assessment teams to initiate work on the development of integrated assessments on a subregional basis for Amerasian Basin/Pacific gateway and Eurasian Basin/Atlantic gateway.

The ASC 2016 included a Theme session on 'Arctic Ecosystem Services: Challenges and Opportunities' (Co-sponsored by AMAP and EU-PolarNet); followed by a workshop organized by the EU-PolarNet.

The Arctic Ocean Acidification (OA) workshop: Pathways to Adaptation: OA in the Arctic, co-sponsored by NOAA, the US Department of State, AMAP, and the Natural Resources Defense Council (NRDC) with additional support from the U.S. Chairmanship of the Arctic Council as a priority initiative. It was held in October in Helsinki, Finland. The workshop served multiple purposes: an opportunity to evaluate the status of the AMAP Arctic Ocean Acidification Assessment Update which follows the 2013 AMAP Arctic OA Assessment. Finland will be taking over the Arctic Council Chairmanship in 2017. The workshop will also serve to develop a broader understanding of Arctic vulnerability to OA, including cultural and social vulnerabilities and present recommendations on an adaptation methodology or framework which might be used to develop customized and regionally specific adaptation strategies for OA in the Arctic region. ICES was represented by the incoming SSGEPD Chair.

ICES Secretariat took part in the AMAP/CAFF international conference of implementing the ecosystem approach in the Arctic (Fairbanks, Alaska). This conference highlighted the added value of working with ICES would bring to Arctic Council initiatives.

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2 SCICOM Open Sessions

Monday, 19 September, Riga, Latvia

2.1 Open Plenary: Without data – no science, no advice, no ICES (Walther/Kirkegaard/Holdsworth)

The SCICOM open plenary was the first session at the ASC. Traditionally it has been a summary of the science highlights in the past. A deliberate change was made in 2014 to make the session more strategic, visionary and inclusive of the ICES community. The purpose was to engage the audience and make them think, where can I benefit from ICES work and where can I engage. For this reason the SCICOM chair had invited co-chairs for this session to highlight important science interactions in ICES.

In 2015 an important review of the connection between ICES Science and Advice was made by SCICOM and ACOM chair. This was followed up in 2016 where the focal point of the opening session was data. The name of the session "Without data - no science, no advice, no ICES" indicates that data is the foundation on which we all depend.

The session was a joint venture between the SCICOM and ACOM Chair and Head of Data and Information. It was very successful and received a lot of positive feedback. The session included the scientific standards requested to create a framework of data provision as well as the needs from Advice. ICES data work from policies, framework on monitoring and collection and repositories was presented. The audience was highly engaged and showed interest in the available databases and accessibility.

2.2 What are the implications for marine ecosystems of interactions between multiple stressors? (Ojaveer/Pierce)

The session addressed Goal 2 'Understand the relationship between human activities and marine ecosystems, estimate pressures and impacts, and develop science-based, sustainable pathways' of the ICES Strategic Plan, with specific focus on the objective 'Understand, quantify, and mitigate multiple impacts of human activity on populations and ecosystems'. The aim of the open session was to present and summarize some of the work carried out recently by ICES expert groups and discuss how to proceed with advancing our knowledge base on the interactive effects of different drivers.

The following presentations were given:

- Examples of the effects of interactive drivers from historical data (Ruth Thurstan and Emily Klein, WGHIST);
- Interactive effects of human drivers from the viewpoint of marine sediment extraction (Ad Stolk and Jan van Dalfsen, WGEXT) ;
- Determining cause-effect relationships between marine renewable energy developments and the benthic ecosystem at different scales' (Andrew Gill and Jennifer Dannheim, WGMBRED);
- How driver interactions may accelerate regimes shifts. Stefan Neuenfeldt and Christian Möllmann, WKSPATIAL) ;
- Challenges for setting management targets for ecological indicators under scenarios of climate change (Nikolaus W. Probst and Simon P.R. Greenstreet, WGBIODIV);

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- SYMBIOSES: practical risk management tool to integrate fisheries and hydrocarbon activities in the Lofoten and Barents Sea, Norway (Daniel Howell, JoLynn Caroll and Frode Vikebø, WGSAM).

Some of the key conclusions include:

- Although extremely valuable, historical data suffer from several shortcomings, such as lack of data prior to commercial fishing, various data reliability issues, proxies that are influenced by additional factors, and the fact that good historical data exist for relatively few species and locations;
- Historical data offer alternative baselines to those we normaly consider; their relevance depends on how much the system has subsequently changed, also the feasibility and desirability of returning a system to a distant past state;
- The scale at which phenomena are measured is an important consideration when it comes to cross-regional comparisons (e.g for marine sediment extraction);
- New and/or emerging activities (e.g. wind farms – creating underwater artificial littoral zones) are significantly modifying banthic communities, affecting local biodiversity and food resources, and the role of benthos as a „biogeochemical reactor";
- The terminology 'regime shift' is not always very informative, and improved/good knowledge of associated mechanisms/processes is essential (as statistical models don't reveal processes). It is important to consider both commercially exploited and other species; there is also a need for much better links between theory and data;
- When construting biodiversity indicators for climate change. It is important to take into account that not all species are equal; for example different pictures emerge from using slow-growing and fast-growing fish species;
- Integrating management to consider spatially co-occurring multiple marine and maritime sectors requires much wider collaboration than we are often used to, and very often, you can't do everything you would like to do.

The presentations were followed by a general discussion as well as some directed discussion on the follow-up to this session. Important points raised included:

- How to coordinate relevant activity in ICES – through a new umbrella expert group or through an existing steering group or some other mechanism?
- In case a new EG were to be established, ToR's should be specific without any overlap of other EGs work.
- How to feed such information into advice? Advice is normally given to answer a client question, the work but can lay the ground for advice in the future (as in ecosystem overviews).
- Issue of scale, i.e. context specific nature of the effects of driver interactions.
- Coordination with regional sea conventions (essentially OSPAR) to avoid overlap of similar activities.

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2.3 Open session: ICES coordinated surveys overviews, reporting, survey design, and e-infrastructure (Handegard)

The Open session: "ICES coordinated surveys: overviews, reporting, survey design, and e-infrastructure" by the ACOM/SCICOM Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM) and chaired by Nils Olav Handegard. The meeting was attended by 50 people, representing both survey and assessment groups.

The chair opened the session by briefly outlining some of the challenges in today's system, including how to obtain overviews of the different survey products and where they are used in ICES advise and science, what information needs to be easily accessible for the users, key considerations on designing surveys, and what infrastructure is available at the data centre to facilitate the process.

Cristina Morgado, Head of Advisory Support, ICES Secretariat, and Ingeborg de Boois, DIG chair, IMARES, Netherlands, gave a presentation on the survey overviews and the status of the stock overviews, and how this can be used to link the data providers and the data users. The stock overviews give an overview of ICES stocks, and includes information about the surveys used for the advice (ref to stock overview?).

An update from the workshop on establishing reporting guidelines from survey groups (WKSUREP) was presented by Marie Storr Paulsen, PGDATA Chair, DTU Aqua, Denmark, and Nils Olav Handegard, SSGIEOM Chair, IMR, Norway. The presentation focused on the information that needs to follow the data, including coverage issues, trawl station allocations, and sub sampling of age and length.

Several working groups have pointed to the lack of expertise in sampling survey design in the ICES system, and Jon Helge Vølstad, WKCOSTBEN Chair, IMR, Norway, presented an overview of key considerations when designing fisheries-independent sampling surveys. This included the necessary steps in designing sampling surveys. It was pointed out that the unavoidable use of multi stage cluster sampling generally is leading to a decrease in effective sample size. An example on estimating abundance-indices by age showed that number of primary sampling units, and less the number of fish measured for length and age from sub-samples, drives the precision.

The last presentation was held by Neil Holdsworth, Head of Data and Information, ICES Secretariat, focusing on the infrastructure at ICES that supports fisheries-independent surveys. ICES provides open access to both data and calculated data products from trawl surveys, (including marine litter and non-commercial species) (datras.ices.dk), eggs and larvae data (eggsandlarvae.ices.dk), and acoustic-trawl surveys (planned for 2017). The environment offers web services (https://datras.ices.dk/WebServices/Webservices.aspx), documented guidance, and an online development hub (https://github.com/ices-tools-prod) to allow use of data directly in R.

After the presentations there was a general discussion about the topics. The need for ICES to task the survey group to take a more active role in providing and calculating the data products from the surveys was emphasized, and this could be achieved by tasking the data centre to continue to build the relevant infrastructure in addition to tasking groups with strong quantitative skills to provide the content, i.e. guidance on design and associated estimators. The survey overviews could be used as a first step on adding value to the surveys, and continuing the work with the stock overviews was supported. The overviews also provide a framework for feedback between survey groups and assessment groups, which is currently missing.

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Tuesday, 20 September, Riga, Latvia

2.4 ICES Science – a quest for impact

Conveners: Tammo Bult, Pierre Petitgas, Anne Christine Brusendorff, Ellen Johannesen, Cornelius Hammer

Results from the electronic survey on perceptions of ICES and ICES-Science were presented, indicating overall satisfaction with ICES:

- Respondents were familiar with ICES and its products and could easily easy distinguish between advice, science & data; ICES importance was not seen as declining.
- ICES could be more pro-active when it comes to agenda-setting, communication & dissemination products.
- ICES should broaden beyond fisheries, including topics such as socio-economics, ecosystem-approaches and industries including aquaculture and the maritime sectors.
- ICES makes an effort to be an inclusive organisation.

However, respondents were mostly part of the regular ICES-network and little external input was received. After this brief review, the session continued with a discussion on topics relevant to ICES and its position, using a "debate-style-set-up" and the following statements:

The rule of this "game" included:

1) Statements are proposed that require a YES or NO position;
2) State your position by moving to the correct side of the room;
3) Convince "the other side" of your position;
4) The person creating most "converts" wins.

Statements

1) ICES's importance will substantially increase over the coming decade
   a. Participants recognised opportunities for increased impact, but doubted ICES ability to swiftly take on opportunities.
2) In the future, routine work in working groups will be done much more by the secretariat
   a. Participants differed in their opinion if WGs are doing routine work. Taking away expert work from EG/WGs will break down the willingness to participate in ICES activities.
3) ICES must engage in "agenda setting"
   a. All participants agreed on this.
4) In the future ICES will provide advice to new NGO-clients like e.g. WWF
   a. Participants differed in their views. Some saw this as a logical next step and given that ICES Advice is based on science the origin of the request may not matter. Others saw a risk in ICES acting more like a consultancy.
5) Industry & NGO experts can partake in WGs as experts

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a. Most were in favour and/or recognised that this is already the case. Discussions focussed on the need for explicit "rules of behaviour" and the role of nominating delegates.

6) Within 5 years, ICES will include more new member states

a. Most thought 5 years is too short but recognised that ICES will include more member states. Opinions differed on which states.

7) ICES must set up a management-masterclass for those with ambitions and qualities for management positions in research organisations

a. Participants questioned if ICES is able to set this up; Some recognised the need for management skills and people with those abilities, to draw from in future leading positions.

The results were further discussed in Bureau later that day and it was decided to repeat the exercise in Council as a basis for further discussion and direction.

David Miller won the debate and received the prize (a bottle of Black Balsam).

Those interested in participation of the electronic survey and its result can send an email to Ellen.Johannesen@ices.dk.

Wednesday, 21 September, Riga, Latvia

2.5 How is your science being used in assessment and advice? (Kirkegaard/Schmidt)

Approximately 50 participants attended the session. The aim of the open session was to discuss a proposal prepared by the ACOM-BSG ad-hoc subgroup to improve links between Expert Groups' and Benchmarks for a more flexible and productive environment for the Expert Groups (EGs) supporting ICES advisory work. In the session the proposal was presented and discussed. A second presentation was made by the ICES secretariat on the development of the new Transparent Assessment Framework.

The audience was quite critical with the suggested framework. The main points of criticism were:

- Complexity of the process
- Data flow and data control is missing
- Unclear role of the reviewers.
- The extend of the scoping is unclear: do we only scope for issues relevant for fish stock assessment or fish stock advice or broader ecosystem assessment or ecosystem advice?
- How can we implement integrated ecosystem models if the process it is still 'owned' by stock assessment groups
- Will the proposed process result in more work for less experts.
- The frequency of assessments need to be discussed in relation to the benchmark process as well as the use of indicator based assessment/evaluation (see tuna stocks)
- If the scoping should be on regional basis (as envisaged) it need to include the identification of management challenges and the scoping on objectives

The input from the open session was discussed in a meeting of the ACOM-BSG subgroup. Recognising the critisism expressed at the open session it was agreed that the

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best way forward would be to test the use of an open scoping process to define key issues to be addressed in the advisory work within an ecoregion.

2.6 JPI/Healthy Oceans and ICES host an open session looking at microplastics (Gerdts/HoS)

The joint JPI Oceans-ICES open session on 'Microplastics in the Ocean' was chaired by Gunnar Gerdts from AWI (Germany). The other panel members were Annika Jahnke from UFZ (Germany), Sonja Oberbeckmann from IOW (Germany) and Andy Booth from SINTEF (Norway). Gunnar (BASEMAN project), Annika (Weather-MIC project) and Andy (PLASTOX project) gave a background and current status for 3 of the 4 JPI Oceans projects currently funded under the microplastics pilot action. Sonja presented results from a nationally funded project MikOMIK in Germany. The final part of the session was allocated to a Q&A round between the audience and the panel members. The session was in general well attended with an estimated 100-150 people in the audience. The goal of the session was to raise awareness of this research topic within the ICES community and to discuss if there is a need to establish an ICES Working Group (WG) on the topic of microplastics. The presentations generated a number of scientific questions from the audience. Furthermore, the Q&A session highlighted a number of ongoing initiatives and activities related to microplastics by ICES members and within existing WGs. In particular, the existing WGs on zooplankton and marine chemistry appear to have ongoing activity. The session concluded that there was definite interest in exploring the need for an ICES WG on microplastics and that a good starting point would be to organise a dedicated ICES workshop on the topic. All agreed that the topic of microplastics is important and should have some specific focus within ICES, but that maybe a cross-cutting group or activity would be more appropriate, with the aim of establishing a stronger link the various related activities/initiatives which are ongoing already across existing ICES WGs.

2.7 How to get your message through (Reeh/Minkkinen)

The aim of the session was to introduce effective communication methods to scientists in order to build a stronger communications capacity within the ICES community to support the organization reaching its strategic goals

The session was convened by. Line Reeh (DTU Aqua), Carl O'Brien (CEFAS), Kari Østervold Toft (IMR), and Terhi Minkkinen (ICES Secretariat). The topic for the session grew out of a communicators' networking meeting at the ASC 2015, where the need for a strategic focus on communication skills within ICES was discussed.

It is essential for the uptake of the work and knowledge of the ICES community in wider society that scientists engage effectively with stakeholders within industry, government and beyond. Yet, conveying a scientific message to a non-specialist audience can be difficult.

With ecosystem based management an effective flow of information between members of the ICES community is of growing importance. As a consequence, sharpening ones communication skills has value beyond increasing public understanding as it can help breach interdisciplinary boundaries between peers.

However, communication skills are not innate; but they can be learned and must be practiced.

The session was kicked off by examples of communication needs, which had been mentioned in other Open Session-presentations during the first three days of the ASC 16,

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supplemented by examples of how being able to communicate effectively about ones work is no longer and an add-on, but a core skill, an integrated and necessary part of doing modern science/advice: From writing grant applications and reports, to giving presentations, hosting stakeholder meetings, giving interviews to the media, engaging on sociale media or working with fishermen and other stakeholders (presenter: Line Reeh, DTU Aqua).

The session went on to directly explore popular science communications methods to present research in a way that will get the message heard and understood. The topic was presented by an invited speaker Peter Hyldgaard, who is a journalist and editor at Videnskab.dk and ScienceNordic.com.

Science communications proves to be a topic that interests the ICES community. The session attracted about 70 participants, and the feedback received was overwhelmingly positive: 97% of the respondents agreed that the topic was interesting, and 89,5% would like to attend a science communications session in the future.

The most popular topic suggestions for the future included social media for scientists, speaking to the media, and writing a popular science article.

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3 Reports of Science Steering Groups

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

3.1.1 Expert Groups under SSGEPD

	Expert Group name	Acronym
1	Working Group on Biodiversity Science	WGBIODIV
2	Working Group on Integrated Morphological and Molecular Taxonomy	WGIMT
3	Benthos Ecology Working Group	BEWG
4	Working Group on Small Pelagic Fishes, their Ecosystems and Climate Impact	WGSPEC
5	Working Group on Phytoplankton and Microbial Ecology	WGPME
6	Working Group on Crangon fisheries and life history	WGCRAN
7	Working Group on Zooplankton Ecology	WGZE
8	Working Group on Oceanic Hydrography	WGOH
9	Working Group on the Biology and Life History of Crabs	WGCRAB
10	Working Group on Resilience and Marine Ecosystem Services	WGRMES
11	ICES IOC Working Group on Harmful Algal Bloom Dynamics	WGHABD
12	Working Group on Cephalopod Biology and Life History	WGCEPH
13	Working Group on Recruitment Forecasting in a Variable Environment	WGRFE
14	ICES/PICES Working Group on Climate Change and Biologically-driven Ocean Carbon Sequestration	WGCCBOCS
15	Working Group on Fisheries-Induced Evolution	WGEVO
16	Working Group on Operational Oceanographic Products for Fisheries and the Environment	WGOOFE
17	Working Group on the Science Requirements to Support Conservation, Restoration and Management of Diadromous Species	WGRECORDS
18	Working Group on Effectiveness of Recovery Actions for Atlantic Salmon	WGERAAS
19	ICES/PICES Workshop on Phase 1: Modelling Effects of Climate Change on Fish and Fisheries	WKSICCME1
20	Working Group on data poor diadromous fish	WGDAM
21	Workshop on Sea Trout 2	WKTRUTTA2

As per 2015 resolutions, SSGEPD includes 18 Working Groups and 3 Workshops. These cover a wide range of ecosystem components, processes, concepts and methodology, including ocean hydrography, pelagic fish, fisheries-induced evolution, ocean carbon sequestration, biodiversity, ecosystem services and molecular taxonomy.

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The work of the groups is regularly reviewed in a variety of ways, including scrutiny of terms of reference, reports and self-evaluations, mapping exercises to address coverage of the Science Plan (see Figures 1 and 2), discussions with chairs at Open Sessions, by Webex and by e-mail, and an overview written by the SSGEPD Core Group in 2015.

It is evident from these exercises that the science remit and activity of these groups extends well beyond the 9 Science Plan topics most obviously associated with EDP and indeed that these groups contribute to ICES data and advice. As such, managing communication with the Expert Groups remains the key role of SSG chairs, seeking a balance between bottom-up and top-down generated work and looking for ways to increase the visibility of the work both within and beyond ICES.

The current SSGEPD chair, Graham Pierce, will leave at the end of 2016 and the incoming Chair, Silvana Birchenough has already participated in the approval of resolutions for EG ToRs in 2017.

Science area	Science Plan priority	WGCRAN	WGCRAB	WGCEPH	BEWG	WGEVO	WGERAAS	WGPME	WGHABD	WGBIODIV	WGZE	WGPME	WGRECORDS	WGMRES	WGIMT	WGSPEC	WGOH	WGRFE	SUM
EPD	1		1		1			1	1	1	1	1	1		1	1	1		11
	2	1	1	1					1						1	1	1		7
	3		1	1					1	1	1	1		1		1	1		9
	4		1		1		1	1	1			1	1			1	1	1	10
	5				1				1	1				1		1			5
	6			1	1	1				1						1		1	6
	7													1					1
	8	1	1		1									1					4
	9	1	1	1		1				1					1	1	1		8
EPI	10	1		1	1	1	1		1	1	1	1			1	1			11
	11		1	1	1	1	1			1	1		1	1					9
	12			1		1	1						1						4
	13		1		1		1			1	1		1						6
	14	1	1		1	1			1					1					6
	15	1		1		1							1	1					5
	16	1	1						1	1				1			1		6
	17		1		1				1					1					4
IEA	18				1					1				1					3
	19				1					1	1								3
	20	1		1	1									1					4
	21				1					1				1					3
	22	1			1									1					3
	23									1				1					2
	24																		0
IEOM	25	1	1	1	1				1		1		1				1		8
	26												1	1					2
	27	1		1	1	1	1	1	1		1	1	1	1	1		1		13
	28	1			1			1	1		1		1	1	1		1		9
	29	1	1		1														3
	30	1		1	1						1								4
	31		1	1	1			1			1	1	1	1	1		1		10
SUM		14	14	13	21	8	6	5	12	13	11	6	11	18	7	8	10	2	

Figure 1. Results from the Science Plan mapping exercise with SSGEPD EGs in 2016.

Science Plan topics are shown on the left, divided according to the steering group to which they are most relevant. An entry of 1 in the table signifies that a group covers a topic in some way. Totals are given for the number of groups working on each topic and the number of topics worked on by each group.

3.2 Reflection on issues raised by expert groups

The division between Science and Advisory Experts Groups is increasingly unhelpful; this has already been addressed for Science groups falling under those Steering Groups jointly chaired by members of SCICOM and ACOM but the remaining ACOM and SCICOM groups (e.g. those under SSGEPD) could also benefit from some form of joint

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parentage. More direct input from Science EGs could provide useful support for the Advisory process while the science done by ACOM groups in support of the Science Plan should also be recognised – and scrutinised – by SCICOM.

Where science groups are making major contributions to advice to clients, they may need additional support. For example, WGZE members invested considerable time and effort organising a workshop to support the *Calanus* request and ICES financial support would have made the process easier.

The increased focus on deliverables such as peer-reviewed papers is beneficial but does not guarantee that relevant ICES work will be picked up by other relevant organisations such as OSPAR or indeed that essential science information will reach ACOM. One solution is already available within the existing system, i.e. where EG findings and products are relevant to another Steering Group, to ACOM or an external organisation this can be highlighted in a Recommendation. However, arguably, it is precisely the apparent formality of the system which apparently discourages EG chairs from simply talking to the people who should be informed of important findings. The flip side of this coin is that ICES reports are regularly cited without permission and in a few cases reproduced without permission by other organisations. Appropriate citation could be encouraged if reports had DOIs.

It is clear that some EGs struggle to attain sufficient numbers of attendees at meetings. ICES is quite effective at handing down additional Terms of Reference but perhaps less so in demonstrating its support and appreciation for the EGs. Additional ToRs imposed by ICES often require a considerable amount of intersessional work to complete, which is reliant on the good will of the membership and sometimes does not deliver what the client wanted. It would be helpful if ICES could provide more detailed guidance to EG chairs about the purpose of the additional ToRs, as well as feedback about the usefulness of the material thus generated. In addition, devolution of a small budget to SSG chairs to support EG work may facilitate help that extends beyond kind words.

SSG chairs are volunteers and may not have time to read 30 Expert Group reports in a year (never mind reports from groups outside their immediate remit) – and in any case it is not efficient use of time. The format of EG reports varies widely, a problem exacerbated by the 3-year terms of reference which can result in two years of near silence followed by a glut of information in the final report. Executive Summaries tend to be bland and uninformative. Arguably what is needed for every report is a section of Key Messages, which could be provided as bullet points in the Executive Summary – these will not necessarily be recommendations but they will highlight what the group thinks is important in its findings and to whom it should be communicated. The topics that feature in the Key Messages should not be difficult to identify (the ToRs are normally there for a reason!). This could be taken further by insisting that EGs have a Dissemination Plan. More than talking about papers and conference presentations this would focus on how, where and when to communicate outcomes to relevant end-users within and outside ICES, with guidance from ICES where such communication might be sensitive. Again this is formalising what should be common sense but it could be helpful.

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3.3 SCICOM Steering Group on Ecosystem Pressures and Impacts (SSGEPI, Henn Ojaveer, Estonia)

3.3.1 Expert Groups under SSGEPI

	Expert Group name	Acronym
1	Working Group on Marine Benthal and Renewable Energy Developments	WGMBRED
2	Working Group on Marine Renewable Energy	WGMRE
3	Working Group for Marine Planning and Coastal Zone Management	WGMPCZM
4	Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem	WGEXT
5	Working Group on Pathology and Diseases of Marine Organisms	WGPDMO
6	Working Group on Biological Effect of Contaminants	WGBEC
7	Working Group on Aquaculture	WGAQUA
8	Marine Chemistry Working Group	MCWG
9	Working Group on Marine Sediments in Relation to Pollution	WGMS
10	ICES Working Group on Introduction and Transfers of Marine Organisms	WGITMO
11	ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors	WGBOSV
12	Working Group on Risks of Maritime Activities in the Baltic Sea	WGMABS
13	Working Group on Social and Economic Dimensions of Aquaculture	WGSEDA
14	Working Group on Application of Genetics in Fisheries and Mariculture	WGAGFM
15	Stock Identification Methods Working Group	SIMWG
16	Working Group on the value of Coastal Habitats for Exploited Species	WGVHES
17	Working Group on Spatial Fisheries Data	WGSFD
18	Working Group on Marine Habitat Mapping	WGMHM
19	Working Group on Methods of Fish Stock Assessments	WGMG
20	Working Group on the History of Fish and Fisheries	WGHIST
21	Working Group on Multispecies Assessment Methods	WGSAM
22	Bayesian Belief Network Case Studies	WKBNCS
23	ICES/PICES Workshop on Economic Modelling of the Effects of Climate Change on Fish and Fisheries	WKeconSICCME
24	Workshop on Understanding the Impacts and Consequences of Ocean Acidification for Commercial Species and End-users	WKACIDUE
25	Workshop on Activity Planning of SIHD	WKAPSIHD

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3.3.2 EG Performance/MA ToR Progress

The following EG's will complete the MA period in 2016: WGMPCZM, WGEXT, SIMWG and WGMRE. All of them have submitted self-evaluation reports, which have been evaluated positively. In addition, WGITMO will be switched to MA management since 2017.

One EG (WGMABS) had chairmanship problem, but the issue was solved by nominating the co-chair to the group.

WGMRE has reported, that as a new group, with members that are mostly new to the ICES community the main challenges have been in relation to establishing clear expectations of purpose, levels of ambition and objectives. Particularly in the context of resource constraints.

Some EG's (e.g. WGBEC, WGAGFM) have requested extension of science delivery of a few ToRs (within the MA-period).

3.3.3 EG participation

In general, participation seems not to be the problem at least for majority of the EG's (e.g., MCWG have reported attendance problems; attendance of WGSEDA was also moderate). However, several EG's have attendance of 20+ participants.

3.3.4 Science Highlights

All EG's under SSGEPI have several scientific outputs which deserve mentioning. Due to space limitations, a few highlights of some groups are presented here. These represent already completed or near-completion work:

- ✓ Meta-data on web-based knowledge and information of relevance to understanding the environmental impacts of marine renewable energy (WGMRE);
- ✓ Database on on marine sediment extraction, including amounts of extraction, spatial extent of licensed areas, spatial extent of extracted areas, geospatial shapefile information (WGEXT);
- ✓ R-script and guidelines for answering the ICES data call on Logbook/VMS data (WGSFD);
- ✓ A glossary of terms for consistent usage of terminology relevant to stock identification (SIMWG);
- ✓ Cormier, R., A. Kannen, M. Elliott, and P. Hall. 2015. Marine Spatial Planning Quality Management System. ICES Cooperative Research Report No. 327. 106 pp (WGMPCZM);
- ✓ Howell, D., Hansen, C., Bogstad, B., and Skern-Mauritzen M. 2016. Balanced harvesting in a variable and uncertain world – a case study from the Barents Sea. ICES Journal of Marine Science. In press (WGAGFM);
- ✓ Lehtiniemi, M., Copp, G., Normant-Saremba, M. and Ojaveer, H. 2016. EU list should add potential invasives. NATURE 533:321 (WGITMO);
- ✓ Engelhard, G. H., Thurstan, R. H., MacKenzie, B. R., Alleway, H. K., Bannister, R. C. A., Cardinale, M., Clarke, M. W., Currie, J. C., Fortibuoni, T., Holm, P., Holt, S. J., Mazzoldi, C., Pinnegar, J. K., Raicevich, S., Volckaert, F. A. M., Klein, E. S., and Lescrauwaet, A-K. ICES meets marine historical ecology: placing the history of fish and fisheries in current policy context. ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv219 (WGHIST).

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3.3.5 Examples of EG activities that fulfil the ICES Strategy and Science Plan

ICES Science Plan objective	Example of the activity
Develop historical baselines of population and community structure and production to be used as the basis for population and system level reference points.	WGHIST ToR: Integrate historical data sources through both state-of-the-art and non-traditional methodologies, to improve our current knowledge base on long-term changes
Develop methods to quantify multiple direct and indirect impacts from fisheries as well as from mineral extraction, energy generation, aquaculture practices, and other anthropogenic activities, and estimate the vulnerability of marine ecosystems to these impacts.	ICES ASC 2016 Open Session: What are the implications for marine ecosystems of interactions between multiple stressors? WGBEC ToR: Develop methods to evaluate effects of acute spills on marine organisms MCWG: Marine litter and its role as a potential source of contaminants
Develop approaches to mitigate impacts from these activities, particularly the reduction of non-target mortalities and enhancement/restoration of habitat, and assess the effects of these mitigations on marine populations.	ICES ASC 2016 Theme Session: Making marine sediment extraction sustainable by mitigation of related processes with potential negative impacts (WGEXT)
Develop indicators of pressure on populations and ecosystems from human activities such as eutrophication, contaminant and litter release, introduction of alien species, and generation of underwater noise	WGMBRED ToR: Identifying and operationalising relevant indicators in relation to assessing ecosystem functioning and change in relation to MBRED WGSFD ToR: Develop robust methods to calculate DCF environmental indicators 5, 6 and 7 WGSEDA ToR: Appraisal of existing economic indicators for their effectiveness to capture the sustainability of aquaculture on multiple levels.
Evaluate ecological, economic, and social tradeoffs between ecosystem protection and sustainable use to advise on the management of human activity in marine ecosystems.	WGMRE ToR: Identify cross-sectoral issues involving marine renewable energy, for example opportunities for co-location, interactions with fishing, aquaculture, fisheries and Marine Conservations Zones. WGBOSV ToR: Investigate and evaluate methods/technologies to assess risks of, to minimize extent of, and to respond to vessel biofouling to inform national and/or International policies or guidelines
Quantify and map biological, ecological, and environmental values, with an aim to optimize ecosystem use and minimize environmental impacts in relation to ecosystem carrying capacity	WGMHM ToR: Using input from WGDEC and BEWG, incorporate and evaluate information on sensitivity of the benthic community of the various seafloor habitats, and provide habitat maps for sensitivity of at least one demonstration area of NW European waters (MSFD region/subregion).

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Develop science in support of advisory needs in marine aquaculture systems, minimizing environmental impacts, and integrating other marine sectors.	WGAQUA ToR: Compile existing and developing methodologies for predicting and assessing the carrying capacity of the ecosystems at different geographic scales WGAQUA ToR: Provide best practices for the environmental impact assessment of aquaculture production, in line with the requirements for the allocation of permits for aquaculture businesses.

3.3.6 Contribution to advisory needs

Expert groups under SSGEPI are very strongly involved in responding to the incoming advice requests. In addition, several EG's advance science directly relevant to several ACOM groups or address high-priority subject-areas in ICES (e.g., EU Marine Strategy Framework Directive, IMO BWMC). The examples from 2016 include:

- ✓ Support OSPAR to progress a review of the environmental effects of wave and tidal energy (WGMRE);
- ✓ Delivery of the dataset on the extraction of marine sediments (the amounts and the area of extraction) in the OSPAR Area to OSPAT (WGEXT);
- ✓ SMS key runs for the Baltic and the North Sea provide M2 values critical for the stock assessments in these area (WGSAM);
- ✓ Contribution to IMO on harmful aquatic organisms in ballast water: proposal for cooperation on matters relating to the transfer of invasive aquatic species by ships (WGBOSV);
- ✓ The proportions of the fisheries represented by the VMS data using logbook data; mapping the ratio of fishing effort covered by VMS data; maps of fishing intensity by mobile bottom contacting gears for the years 2009–2015; mapping significant trends in the fishing intensity during the period 2012–2015; advice on development and application of alternative smaller grids, together with pros and cons for different solutions (all OSPAR request; WGSFD);
- ✓ Contribution to ICES advisory needs by providing expert feedback on the status of stock structure of several species. These requests came from a range of ICES working groups including WGWIDE, WGBIE, WGHANSA, and NWWG; benchmark workshops including WKPLE and WKHAD, and advice drafting groups (SIMWG).

3.3.7 Perceived needs and gaps

- Involvement of SSGEPI chair in the communication between ICES Secretariat and EG chairs under SSGEPI is vital;
- Although ICES-ICCAT WGMG ToRs were approved by ToR's, ICCAT nominated co-chair is still missing. There might be a need from the ICES Secretariat to be involved here and send a reminder to ICCAT;
- Aquaculture is one of the high-priority topics in ICES. Shutdown of WGAQUA by SCICOM, and associated nomination of SSGEPI chair to lead the strategic planning and reorganisation of Aquaculture in ICES requires quick actions and

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smoothly arranged process to ensure expert input to the delivery of aquculture overviews;

- The 3-year cycle puts a pressure on organising work in some EGs and amendment of ToRs within the MA period is to be expected;
- Several EG's under SSGEPI produce valuable new knowledge which could be used in addressing MSFD. Thus, there might be a need for better coordination of such activities in ICES to assemble all the valuable science produced.

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

3.4.1 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. In 2016, a new IEA WG was proposed: -The Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA). This had a successful first meeting in May 2016. A dedicated EG for the provision of detailed ecosystem advice in the Baltic was identified in 2015 and a new group set up: WKDEICE – Workshop on DEveloping Integrated AdviCE for Baltic Sea ecosystem-based fisheries management. This had a successful first meeting April 2016. WGMSFdemo was set up in 205 and had a successful first meeting in February 2016. This is designed as a pilot for linking the IEA work to MSFD advice, focussed on the Celtic Sea.

We also identified the need for a forum for "integrating" the IEA groups, and this led to the setting up of WKIDEA (Workshop on Integrated Ecosystem Assessment Methods). This is programmed to meet in October 2016.

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;

- Continued strong collaboration with SSGIEOM following the Workshop on the review of the ecosystem survey requirements (WKSUREQ). Led to inputs to joint ICES/EFARO initiative on ecosystem surveys, currently pending

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

- Ongoing

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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.

- Information and inputs on the Regional Ecosystem Descriptions, and the development of these as public dissemination tools.

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

- As noted in our previous report, in general, the IEA work is not yet ready for full benchmarking. However, an approach was piloted through WKIRISH Workshop on the impact of ecosystem and environmental drivers on Irish Sea fisheries management in late 2015. The WKIDEA workshop is in collaboration with BSG, and chaired by the SSGIEA and BSG chairs.

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. WGEAWESS submitted a proposal for a western waters IEA project (AtlantEA) under the recent Intereg Atlantic Area call. This has passed the first phase of evaluation, and will be submitted in full in November.

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 – In pursuit of this there is a theme session at the 2016 ASC: Integrated ecosystems assessment and decision support to advance ecosystem-based fisheries management – Session F.

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 – and specifically addressed at WKIDEA

3.4.2 EG Performance/MA ToR Progress

All the EGs are performing well. The EG have all developed multi-annual ToRs. WGICA, WKDEICE, and WKINWA are new and had their first meetings in the last year. WGCOMED, WGEAWESS, WGIBAR, WGINOR, WGINOSE, and WGNARS

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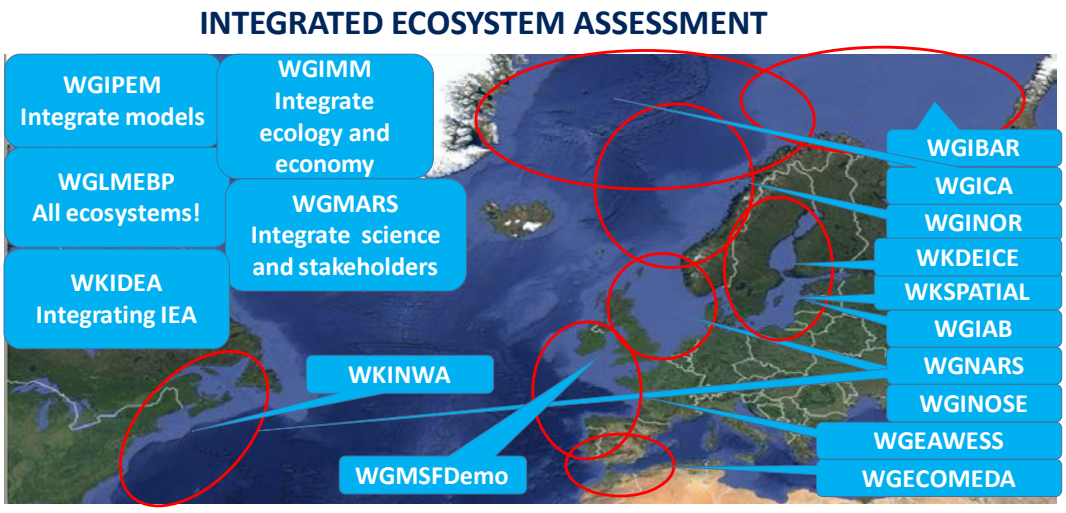
have successfully reached the end of their three year ToRs, and have completed the self-evaluation process, and submitted new 3 year ToR.

3.4.3 EG Participation

Attendance at most EG meetings held since the last report has been good. However attendance was lower at WGEAWESS and WGINOSE.

3.4.4 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. They are supported by the linked workshops (WGMSFDemo, WKDEICE, WKINWA, and WKSPATIAL). The five groups in the left panels have 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. Two further groups have been proposed. WKIDEA aims to help integrate the Integrated Ecosystem Assessment EGs.



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Expert groups in SSGIEA

	Expert Group topic	Acronym	Chairs
1.	Working Group on Integrative, Physical-biological, and ecosystem modelling	WGIPEM*	Morgane Travers-Trolet, Marc Hufnagl
2	Workshop on Spatial Analysis for the Baltic Sea	WKSPATIAL	Michele Casini and Stefan Neuenfeldt
3	Working Group on Ecosystem Assessment of Western European Shelf Seas	WGEAWESS	Steven Beggs, Eider Andonegi,
4	Working Group on the Northwest Atlantic Regional Sea	WGNARS	Robin Anderson, Geret DePiper
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
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	Laura Uusitalo, Lena Bergström, Martin Lindegren, Saskia Otto
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	David Goldsborough
14	Working Group to Demonstrate a Celtic Seas wide approach to the application of fisheries related science to the implementation of the Marine Strategy Framework Directive	WGMSFDemo	Jean-Paul Lecomte, Eugene Nixon and Carl O'Brien
15	ICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean	WGICA	John Bengtson, Hein Rune Skjoldal
16	ACOM/SCICOM Workshop on Integrated Ecosystem Assessment Methods	WKIDEA	David Reid, Jörn Schmidt
17	Workshop on IEA in the Northwest Atlantic	WKINWA	David Goldsborough
18	Workshop on DEveloping Integrated AdviCE for Baltic Sea ecosystem-based fisheries management	WKDEICE	Rudi Voss, Christian Mollmann, Maciej Tomczak

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3.4.5 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 these groups did not meet in the last year e.g.

WGCOMEDA Bilbao May 2016 3 years ToR ended. Self-evaluation completed.

Specific chapters on:

- Global patterns of stability in fish community dynamics
- From traits to life-history strategies
- Biodiversity, community and ecosystem traits changes at regional scales
- Exploring a demographic portfolio using pelagic forage species across Mediterranean and Atlantic ecosystems.
- Investigating patterns and drivers of functional diversity of benthic ecosystems.

WGIAB Helsinki April 2016

- Extended IEA beyond considering changes in abundances of a few dominant species, to accounting for community-wide changes in a number of key traits across multiple trophic levels.
- Developed a conceptual model of interrelationships between ecosystem and society.
- Evaluated the probability of occurrence and the magnitude of the effect of 15 pressures occurring in the Baltic Sea. The top five pressures identified were input of nutrients, increased temperature, decreased salinity, input of hazardous substances, and input or spread of non-indigenous species.

WGIBAR Murmansk February 2016

- Reported that since the 1980s there has been a warming trend, reduced fishing pressure, and increased biomass of several mostly boreal species. The current situation is unprecedented. The main findings were:
- Higher atmosphere and ocean temperatures, lower ice coverage
- The mean biomass of mesozooplankton was somewhat higher.
- Krill biomass remained higher than the long-term mean and Hyperiid amphipods (colder water), were at low levels.
- Capelin biomass decreased to a low level.
- Polar cod is at its lowest level since 25 years.
- New sea areas of sea are open for human activity due to ice retreat.
- The distribution area of the invasive snow crabs continued to increase.

WGINOSE Hamburg March: 2016 3 years ToR ended. Self-evaluation completed.

- Identified appropriate spatial scales (strata) to apply the Integrated Ecosystem Assessment (IEA) methods including the development of Bayesian Belief Networks (BBNs) to support ecosystem advice.

WGNARS Falmouth March 2016: 3 years ToR ended. Self-evaluation completed.

- Finalized the MSE model outputs for the Georges Bank and Gulf of Maine US ecoregions

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- Developed a draft MSE model for the Canadian Grand Banks ecoregion.

WGEAWESS Belfast March 2016: 3 years ToR ended. Self-evaluation completed.

- Integrated Trend Analyses for the Irish Sea has been further developed
- Completed a review of the Ecosystem Overviews (EOs) recently published by ICES for Celtic Sea Ecoregion and the Bay of Biscay and the Iberian coast Ecoregion.
- Two new developing IEAs: one in the Gulf of Cadiz and the other one in the Bay of Biscay, both aiming at progressing towards the implementation of the Ecosystem-based Fisheries Management in these subregions.

WGICA Copenhagen May 2016

- Two assessment teams were established to initiate work on the development of integrated assessments on a subregional basis for:
    - Amerasian Basin/Pacific gateway
    - Eurasian Basin/Atlantic gateway.

WGIPEM Brest June 2015

- Focus on comparing how perturbations in mortality terms will influence the spatial and temporal dynamic of trophic cascades as represented in lower trophic level models of different complexity.
- Identified methods and possibilities to perform sensitivity analysis and parameter testing for complex ecosystem models.
- Physiological based models of foraging and growth and how to most appropriately include thermal limits such as aerobic scope as depicted in the Oxygen and Capacity Limited Thermal Tolerance (OCLTT) paradigm.

WGMSFDemo Glasgow February 2016

- Preparation work for the EFARO/ICES initiative on preparing an integrated ecosystem survey
- Significant progress made on the "clean up" of the DATRAS data for use with the OSPAR MSFD indicators
- Common stratification scheme for international surveys conducted in the Celtic Seas last year.
- Investigating a worked example for two different types of surveys in relation to the candidate foodweb indicator 'typical length' for survey suitability to deliver MSFD indicators.

3.4.6 ACOM and SCICOM Interaction

In 2014 it was agreed that SSGIEA would be represented on both ACOM and as an ex-officio member of ACOM. This was discussed and agreed by SCICOM at the ASC. The SSG chair has attended several meetings of ACOM in this capacity, and in particular the discussion focused on advice delivery and incorporation of the human dimension. As a result, and along with the BSG, WKIDEA was set up and will be run in October 2016 to help "integrate" the IEA approach. A similar process led to the setting up of WKDEICE to provide ecosystem and fisheries advice in the Baltic, which successfully met in 2016.

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3.4.7 Perceived Needs and Gaps

As we stated in previous reports, an important need for SSGIEA was to bring together the IEA groups for information exchange, and methodology transfer. WKIDEA was specifically set up for this purpose and will meet in October 2016. The theme session at the 2016 ASC: Integrated ecosystems assessment and decision support to advance ecosystem-based fisheries management – Session F is designed to forge links with IEA work in the wider community – ICES and worldwide..

3.4.8 Examples of EG activities that fulfil the ICES Strategy and Science Plan

All the regional EG under SSGIEA have principally focussed on Goal 1 of the strategic plan "*Develop an integrated, interdisciplinary understanding of the structure, dynamics, and the resilience and response of marine ecosystems to change*", and on Goal 2 *"Understand the relationship between human activities and marine ecosystems, estimate pressures and impacts, and develop science-based, sustainable pathways.*

This includes the development of a range of worked IEA examples and detailed ecosystem descriptions. The approach to "integrate" the IEAs through WKIDEA takes this process forward another step.

Under Goal 3 *"Evaluate and advise on options for the sustainable use and protection of marine ecosystems"*, the groups are starting to develop the concepts of proactive advice, principally linked to fisheries advice, where ecosystem effects may be important, e.g. in the Irish and the Baltic Seas. The work of WGMSFDemo also specifically addresses this area in the context of MSFD advice using CFP data. The setting up of WKDEICE specifically addresses gaps between IEA and advice in the context of the Baltic Sea, where this problem was most obvious. The work on coupled models by WGIMM & WGIPEM also greatly enhances this understanding.

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

3.5.1 Status on SG Terms of Reference

Tor a-f) are common terms of reference for all SSGs and specifies the tasks on how to consolidate EG base, form new EGs, ensure the coupling to the strategic plan, and communication in general between the EG on matters. The specific ToRs for the steering groups are reported on in the following.

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. A process to address this was reported on in 2014, and the findings can be found in that year's report. In summary the common gaps that were reported were lack of hydrographic skills (WGIPS), socio-economics (WGRFS) and analytical skills including survey design and statistics (IBTSWG, WGIPS, WGBIFS). 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.

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 prioritised (SP1.1).

The WKSUREQ concluded that a formalized system for mapping the information flows across the organisation is needed. DIG has initiated a process on collecting meta information about where the different data products are used. A SCICOM open session has been set up at this year's ASC to address the survey overviews including the data

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products that they produce. A similar process needs to be set up from the data users (both Science and Advisory side), and there needs to be a place where the needs can be checked off relative to what is already provided.

ToR i-j) The development of methodology and adding value to fisheries independent surveys is an ongoing process and there are groups continuously addressing these aspects, mainly carried out within the technology groups (e.g. WGFAST, WGFTFB) and PGDATA, WGISUR, and WGISDAA, respectively. Developments for fishery data collection schemes are considered PGDATA and associated EGs (WGCATCH, WGBIOP, and WGRFS). In addition to this, PGDATA and WKCOSTBEN have pointed to pointed to several challenges in obtaining a cost efficient approach (see PGDATA report).

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 a continuous task, and almost all survey groups have either finalized the job or have an advanced draft in place. Based on the WKSUREP work the SISP guidelines will be updated to include how to document key information for data product users. The WK has approached the survey groups, the users, including assessment groups, and input have been received from several of the groups. Some of the group report that they already have this in place, whereas others needs to look into this.

3.5.2 EG performance/MA ToR Progress

The table below list all the SSGIEOM EGs that have completed their first three-year term. All of them have submitted self-evaluation reports, which have been evaluated positively.

WGFAST	Working Group on Fisheries Acoustics, Science and Technology
WGFTFB	ICES-FAO Working Group on Fishing Technology and Fish Behaviour (WGFTFB)
WGBEAM	Working Group on Beam Trawl Surveys (2015 report not received yet)
WGISUR	Working Group on Integrating Surveys for the Ecosystem Approach
WGIDEEPS	Working Group on International Deep Pelagic Ecosystem Surveys
WGISUR	Working Group on Integrating Surveys for the Ecosystem Approach
WGTC	Working Group on target classification

3.5.3 EG participation

EG participation is a reoccurring theme, both in terms of skills and attendance. The challenges are similar to last year.

3.5.4 EGs in SSGIEOM

1) WGISUR – Working Group on Integrating Surveys for the Ecosystem Approach

2) WGFAST – Working Group on Fisheries, Acoustics, Science and Technology

3) WGFTFB – Working Group on Fishing Technology and Fish Behaviour

4) WGIDEEPS –Working Group on International Deep Pelagic Ecosystem Surveys

5) WKBIFS-ACOU – ICES Workshop on Implementation and Use in IBAS of a New Common Acoustic Database

6) WGCATCH – Working Group on Commercial Catches

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7) WGRFS – Working Group on Recreational Fisheries Surveys

8) WGBEAM – Working Group on Beam Trawl Surveys

9) IBTSWG – International Bottom Trawl Survey Working Group

10) WGEGGS – Working Group on North Sea Cod and Plaice Egg Surveys in the North Sea

11) WKSUREP – Workshop to establish reporting guidelines from survey groups

12) WKARGH – ICES_NAFO Workshop on Age Reading of Greenland Halibut (Reinhardtius hippoglossoides)

13) WKARWHG– Workshop on Age reading of Whiting (Merlangius merlangus) (WKARWHG)

14) WKARA2 – Workshop on Age reading of European anchovy (Engraulis encrasicolus)

15) WKARSPRAT – Workshop on Age estimation of Sprat (Sprattus sprattus)

16) WKFICON – Workshop on Fish Condition

17) WGNEPS – Working Group on Nephrops Surveys

18) WKNEPS – Workshop on Nephrops burrow counting

19) WGBIOP – Working Group on Biological Parameters

20) PGDATA – Planning Group on Data Needs for Assessments and Advice

21) WGBIFS – Baltic International Fish Survey Working Group

22) WGMEGS – Working Group on Mackerel and Horse mackerel Egg Surveys (WGMEGS)

23) WGIPS – Working Group of International Pelagic Surveys

24) WGISDAA –Working Group on Improving use of Survey Data for Assessment and Advice

25) WGTC – Working Group on Target Classification

26) WGELECTRA – Working Group on Electrical Trawling

27) WGACEGG – Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VII, VIII and IX

28) WGALES – Working Group on Atlantic Fish Larvae and Eggs Surveys

29) EIMSD – EFARO/ICES meeting on Cooperation in Surveys and Data Collection

30) WKPIMP – Workshop to Plan and Integrate Monitoring Program in the North Sea in the 3rd quarter

31) WKGIC2 – Workshop on Growth-increment Chronologies in Marine Fish: climate-ecosystem interactions in the North Atlantic

32) WKCOSTBEN – Workshop on cost benefit analysis of data collection in support of stock assessment and fishery management

3.5.5 Science highlights

WGIPS has contributed substantially to the ICES acoustic database and associated postprocessing software (StoX). They have implemented the system for several of their

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surveys. A paper by Gastauer et al on the distribution patterns of blue whiting has been published (Gastauer et al., 2016).

WGFAST The special issue in IJMS from the latest fishery acoustics conference are available online (Trenkel et al., 2016). The work with the ICES Acoustic metadata standard are progressing, and a new version is sent for review. This is an important input to the ICES acoustic database. Acoustic methods to assess krill distribution, investigate sound-scattering layers, pelagic habitats, and help construct a better understanding of oceanic features have been addressed. They have also focused on wideband systems and WGFAST will organize an ICES Training course on 'Principles and methods of broadband/wideband technologies: Application to fisheries acoustics" in December.

WGFTFB contributed to a two-and-half-day mini-symposium hosted by FAO in collaboration with Marista University of Merida. A synthesis of recent technological advancements in the spreading of mobile trawls have been provided, and non-extractive sampling is on the agenda. The group also address change management in the fishing industry, and suggest interaction with the SIHD.

WGBEAM has not been able to finalize their report this year.

WGISUR has developed a guidance document for all developing ecosystem monitoring (monitoring of one or more components of the ecosystem), whether from scratch or by adding tasks to current surveys. This is the main contribution from the 3 year cycle that is completed this year.

WGELECTRA has provided an update on ecosystem effects on pulse trawl with special reference to the species covered by the Natura 2000 species and habitats directive.

WGACEGG report the results from nine surveys. They are also looking into using auxiliary survey data to support anchovy mortality model, and are specifically addressing the daily egg production methods.

WGTC input pending.

WGIDEEPS input pending.

WGISDAA input pending.

WGBIFS There is work going on to move the historical data to the ICES databases and to phase in new postprocessing software for the surveys.

PGDATA has started to develop a cost benefit framework to ensure that data collection programmes are closely aligned with end-user needs, deliver data of sufficient quality to meet these needs, and make most efficient use of available human resources and funding.

WGBIOP focus on both existing biological parameters and on accuracy in derived life-history parameters which may support stock assessment; both single-stock and integrated ecosystem assessment. This is their first year, and the groups has good traction.

WGALES are concerned with standardization, calibration, data quality and data storage, and covered two science topics during their meeting, including "Current ichthyoplankton surveys in the Atlantic and Mediterranean" and "Recent developments in egg and larval mortality studies".

IBTSWG is close to implementing swept area abundance indices, based on trawl net geometry and towed distance.

WGEGGS2 has tested and proved the MIKey-M sampling and demonstrated that it can be used to sample fish eggs properly without costing extra time during the IBTS-MIK

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survey. Fish eggs have been collected throughout the North Sea and with the same design as the MIK hauls.

3.5.6 Examples of EG activities that fulfil the ICES Strategy and Science Plan

See the preceding section on the SSG ToR, where each SSG ToR is linked to an item in the implementation plan. Under each ToR the EG that addresses the specific ToR is mentioned.

3.5.7 Interaction between ACOM and SCICOM

There is still a need for improved communication between data users and data providers. Several actions have been taken to improve this, but I am not confident that we have an efficient structure to accommodate this. Perhaps more strongly encourage the survey EG chairs to participate at the chairs meeting is warranted.

The comment from last year is still valid: "It is also worth noting that it is not necessary the communication between SCICOM and ACOM at a higher level that is the challenge. It is more that specialized survey groups and data users groups need to communicate on specific issues for relevant for both groups, rather than a situation where communication is established at ACOM /SCICOM level or steering group level."

3.5.8 Perceived needs and gaps

The need for a framework to evaluate and obtain an overview of the data from the survey groups and where this data flows is seen as a main gap. This should be seen as something more than simply an overview of what is presently being collected. The idea is that this could be used as a framework to include the work of WGISUR that could visualize how additional information from the survey groups could be used in, e.g., the IEA processes. The framework must contain the use and potential use of the information, including precision and bias considerations of the various data products. For any advisory process, the information that is used in the advice should be easily available. It could also serve as tool to visualize where the information from a survey flows to document how the survey effort was spent. There are processes initiated to address this, but it will need both development and maturation to fulfil its ambition.

3.5.9 References

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3.6 Benchmark Steering Group (BSG; Jörn Schmidt, Germany/Carmen Fenandez, Spain)

3.6.1 Progress on tasks

During 2016, the Benchmark Steering Group has continued to work in subgroups, focusing mostly on the 6 tasks that were presented in the report for the SCIOM and ACOM meetings in 2015. A core activity in 2016 was the work in the joint BSG-ACOM

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ad-hoc subgroup to improve links between Expert Groups' and Benchmarks' work and to increase efficiency of resource utilization. A short background on this is given in 2.

List of BSG tasks:

Task 1: Identifying gaps and incremental improvements in the current benchmark processes

Task 2: Integration with the data quality assurance groups

Task 3: Integrated assessments and benchmarks

Task 4: Integrating by-catch (marine mammals) advice with fish stocks advice

Task 5: Role of WGSAM and reviewing of multispecies/ecosystem models for use in benchmarks

Task 6: Improve integration of WGISDAA (Improving the use of survey data for assessment and advice) in benchmark process

An additional task has been initiated to set up evaluation criteria for the uptake of science into assessment and advice. This is a crucial and core task.

3.6.2 BSG-ACOM subgroup

During the ACOM annual meeting in December 2015, ACOM discussed the need to develop a more flexible and productive environment for the ICES Expert Groups (EGs), particularly the assessment EGs, and for the benchmark process. An initial proposal was sketched during the ACOM meeting and a subgroup set up to work by correspondence according to Terms of Reference a-e below.

The main aims of the subgroup are to further develop the initial proposal prepared during the December 2015 annual ACOM meeting, focusing on

- Enhancing the way stock assessment EGs work, in cooperation with the ICES Secretariat (in particular, the new stock assessment posts at the Secretariat).
- Developing a more productive working environment for the stock assessment EGs, which should focus their work strategically towards improving stock assessments and benchmark preparation.
- Creating a more flexible process to structure the work leading up to benchmarks, so that the work of EGs (including stock assessment EGs) can focus on the main issues of each ecoregion and benchmarks take place when sufficient work has been developed; this should allow benchmarks to produce higher quality products. As this involves a wider range of experts and EGs in ICES, it should be considered in collaboration with the Benchmark Steering Group.
- The subgroup should prepare a proposal for discussion during the ACOM consultations in September 2016. The proposal should be detailed (not just a sketch) and include a timeline for possible implementation. Foreseeable problems should be identified and, where possible, mitigation measures proposed to facilitate the implementation
- The subgroup should propose a special session for the ASC2016 in Riga to allow feedback from a wider audience on the proposed changes.

As there is overlap with the work of the ACOM-SCICOM Benchmark Steering Group (BSG), it is considered appropriate that this should be a joint BSG-ACOM subgroup, chaired by Carmen Fernández (ACOM Vice-chair and BSG Co-chair) and Jörn Schmidt (BSG Co-chair). The following membership was agreed by ACOM: Larry Alade, Robert

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Aps, Fatima Borges, Harald Gjøsæter, David Miller, Carl O'Brien, Morten Vinther, Christopher Zimmermann. Cristina Morgado and Mark Dickey-Collas will participate from the ICES Secretariat.

The ACOM chair, Eskild Kirkegaard, also took part in the subgroup's work.

The subgroup worked inter-sessionally, including 5 WebEx meetings during March-July. A document on the work of this group is available and the work will also be presented in an open session on Wednesday, 21st September 2016 during the ASC.

3.6.3 BSG ToRs for 2016

2015/2/ACOMSCICOM03 ACOM/SCICOM Benchmark Steering Group (BSG), chaired by Carmen Fernández*, ICES, and Jörn Schmidt*, Germany, will work by correspondence; hold WebEx meetings and direct meetings during the 2014–2016 ASC, and thematic workshops.

General ToRs

The main objectives of the Benchmark Steering Group are to:

a.1) Facilitate the transfer of science into advice.

a.2) Advance the benchmark process in ICES and develop the concept of regional ecosystem benchmarks.

a.3) Develop evaluation measures for the actual uptake of available science in assessment and advice.

a.4) Develop performance measures for the Benchmark SG work and the effectiveness of the benchmark process.

a.5) Form an umbrella for the entire benchmark process in ICES.

By means of:

b.1) Communicating and liaising with other Steering Groups, Expert Groups, ACOM and SCICOM, and the ICES Secretariat, to jointly carry out different aspects of the work, as appropriate.

b.2) Encouraging the dialogue between ICES scientists, managers and stakeholders, and their participation in the benchmark process.

b.3) Advising on how to attract new scientists and academics into the ICES benchmark process: advertise in international networks and develop an attractive publication scheme of benchmark results (with PUBCOM).

Overarching ToRs for Benchmark SG (2014-2016)

c) Identify advisory tasks that require benchmarking, based on science and advisory information.

d) Develop an achievable work programme for benchmarks in three main strands:

d.1) Annual benchmark programmes (most applicable to fish stocks assessments for recurrent advice). Focus on incorporation of relevant mixed fisheries, multispecies and ecosystem aspects (environmental drivers, impacts, constraints) in this process.

d.2) Evaluate the appropriateness, need and feasibility of establishing benchmarks for other environmental/ecosystem aspects of ICES recurrent advice (for example in connection with assessments of seabird population status or marine mammals).

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d.3) Develop a multiyear roadmap for assessment of ecosystem components and integrated ecosystem assessments. Build on the process initiated by WKBEMIA in 2012 towards operational benchmarks of integrated ecosystem assessments (IEA) at regional scales. The roadmap should consider how a benchmark process should look at a regional scale, identifying common issues across the region (e.g. data quality, fisheries management, surveys, environmental conditions and changes); data workshops for the region may precede IEA workshops.

e) Actively seek elements of the work of the existing IEA Expert Groups and other relevant Expert Groups that could soon be integrated in advice. Facilitate the development of "demonstration" examples that could help clients and stakeholders see opportunities.

f) In collaboration with the Secretariat, develop draft ToRs for the actual benchmarks (for ACOM and/or SCICOM approval), defining aspects to be considered and advisory aspects to be delivered. This also includes identifying the scientific expertise needed and reconciling needs with availability.

Specific ToRs for 2016:

g) Develop and implement a work plan for 2016 with focus on:

g.1.) Develop performance measures for the BSG (ToR a.4)

g.2) Develop evaluation criteria for the uptake of science in assessment and advice (ToR a.3)

g.3) Develop develop an attractive publication scheme of benchmark results (ToR b.3)

g.4) Evaluate the effect of the new workflow and communication strategy on the benchmarks in 2017 (ToR d1)

g.5) Identify recurrent advice provided by ICES other than fish stock advice and evaluate the appropriateness of benchmarking the underlying assessment (see ToR d.2).

g.6) Evaluate WKBALT and WKIRISH to adjust the process for regional benchmarks (ToR d.3)

g.7) Prepare a sequel to WKRISCO together with SSGIEA

3.6.4 Interaction between ACOM and SCICOM

The activities of the BSG are targeted towards 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.

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4 Reports of SCICOM Operational Groups

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

The Data and Information Group (DIG) met in Copenhagen, 23-25 May 2016. 18 people representing 17 institutes in 10 different countries, a representative from OSPAR and ca. 10 members of the ICES Data Centre joined the meeting.

4.1.1 DIG positioning in ICES

In the light of the current SCICOM Leadership discussion, DIG discussed its position within ICES. In general, DIG is well able to be a cohesive pillar between horizontal layers (e.g. EGs, ADGs) in ICES. From some examples, it seems that the focus lays more on the data delivery and science side than on the advisory topics. However, the group agreed that this is merely a matter of visibility. Via the Data Centre DIG is at least informed about all ICES work related to data, and the responsibility for regular updates of Data Policy and Data Strategy, DIG has a generic role for the ICES community.

It was concluded that the DIG mission still applies, and reflects the scope of the group.

The current report structure and terms of reference were largely inherited from the expert group structure, and do not always effectively reflect the more strategic approach by DIG to provide an element of Data and Information Governance for the ICES community.

Short term changes

It was suggested that one of the terms of reference could be refined, by changing it from 'Review offspring groups' into 'Propose ad-hoc groups (governance, workshops, training, etc.) related to specific topics, and/or datasets, to facilitate improvements related to data issues to SCICOM, ACOM, SCICOM SSGs and/or EGs, and review the outcome of those ad-hoc groups'. The ad-hoc groups fall under DIG, and all have a limited life-time –till the task is fulfilled. In this way, DIG will have the possibility to organise follow-up on specific problems, and define the appropriate group composition for the specific issue.

Furthermore, to increase the visibility of DIG and let more people be aware of the role of DIG, the group should be actively represented at the annual ICES WGCHAIRS meeting.

Change of workflow on longer term

Proposals for change of mode of operation on longer term are still under discussion. The first ideas are presented in the DIG 2016 report.

4.1.2 ICES Data Policy

DIG updated the ICES Data Policy as part of the regular update data Policy reviewing cycle (every four years). The scope of the Data Policy was reworded and a new paragraph referring to open access data was added, related to inclusion of more restricted data sets than the current ones. The Data Policy now distinguishes between data submitted to ICES where public access might be restricted – the underlying data- and the data products that are still fully publicly available even if derived from restricted undelaying data.

The updated Data Policy will be reviewed by Council before it will be published. The most recent version of the ICES data policy is always available via the ICES website.

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4.1.3 Digital Data Citation

ICES is now capable to mint persistent identifiers as DOI's (Digital Object Identifiers) for publications and datasets. The implementation in ICES is currently in a testing phase and will be available in late 2016.

The minting process connects metadata, DOI number and the URL of the publication (landing page) together. Using a DOI resolver (eg. https://dx.doi.org/) the DOI number can then direct a user to the publication or dataset via the URL linked to the DOI. The developed solution integrates with the current ICES SharePoint webpage on library publications. The DOI metadata will be available as a link on each publication thumbnail.

The use of digital citation and DOI minting is expected to widen in scope after this initial phase where the focus has been on publications. When doing digital citations on datasets there are additional issues to deal with like how to deal with non-static datasets.

4.1.4 ICES Data Guidelines

The ICES data type guidelines as currently shared at the ICES website and OceanDataPractices (since autumn 2014) are a valuable asset for the wider oceanography community. The ICES data type guidelines were originally written in the 1990's, and reviewed in in the early 2000's. The last review took place in 2006. It is important to keep the guidelines up to date. DIG agreed on the a procedure to review the guidelines and make their existence better known.

4.1.5 ICES dataset collections and portals

Tools and facilities that have been developed or improved by the ICES Data Centre:

New operational dataportals and datasets

- Portal for deep sea discoveries (Vulnerable Marine EcoSystems): The portal recently launched by ICES visualises all known vulnerable marine ecosystem (VME) data in the North Atlantic.
- Impulsive noise register system (requested and funded by OSPAR and HELCOM). Underwater noise, sound that has the potential to cause negative impacts on marine life, is one of the key descriptors of marine ecosystem health under the Marine Strategy Framework Directive (MSFD).
- The biodiversity portal, which collates data on seabirds and seals abundance and distribution, went online in May 2016. This portal assembles data supplied by contracting parties to OSPAR (North East Atlantic) as well as other data from the ICES area. This database is specifically purposed with supporting OSPAR in providing information that will feed their regional assessments of biodiversity.

Coming up (soon)

- The acoustic trawl data portal is a result of a series of workshops, and on request of the survey groups involved in acoustic fish surveys (e.g. WGIPS 2016 report). The ICES Data Centre presented the idea behind and the component of the upcoming Acoustic Trawl data portal as well as the general structure of the Acoustic Trawl data model.

The Quality Control (QC) Database is a repository for information about the checks that are applied to the incoming datasets. It now has about a thousand registered

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checks. It is scheduled for the second part of 2016 to develop a web based interface for the QC Database in order for users to query it and produce downloadable reports for each dataset.

4.1.6 Data plan progress

The ICES Data Plan progress can be found in the DIG 2016 report Annex 6.

4.2 ICES Training Programme (Daniel Duplisea, Canada)

The ICES Training Programme was initiated in 2009 to help build capacity in ICES and to support the scientists involved in the advisory process. ICES offers training courses by high-profile scientists and instructors to ensure that scientists whose work is related to the advisory process, have the necessary skills. The objective of ICES training is quality assurance in the advisory process.

The ICES Training Programme has been successful in meeting its objectives of increasing the scientific capacity of the ICES community and promoting best practices in marine science. Thirty-five ICES courses and several co-sponsored courses have been offered on a wide diversity of skills, including stock assessment (introductory and advanced), ecosystem modelling, model building, management strategy evaluation, Bayesian inference, fisheries advice, trawl survey design and evaluation, integrated ecosystem assessment, analysing and visualization of Vessel Monitoring Systems, communication of science and advice, and how to lead an effective technical meeting. Each course was taught within the context of the ICES science and advisory system to demonstrate best practices as well as state-of-the-art technical skills. More than 800 students have attended ICES courses from over 30 countries. Most students have been from ICES member countries, representing all member countries but one. Many students and several instructors are from other countries and cooperating organizations.

4.2.1 Progress Report

In 2016, the ICES Training Programme has had seven training courses on offer.

- Training course in the R environment, 29 February–4 March 2016, Copenhagen, Denmark
- Social science methods for natural scientists, 26–28 May 2016, Brest, France
- Design and analysis of catch sampling programmes, 12–16 September, ICES, Copenhagen, Denmark
- Data-limited stock assessment, 12–16 September, Reykjavik, Iceland
- Management Strategy Evaluation: an introduction, Postponed to 2017
- Stock assessment (advanced), 28 November–2 December, ICES, Copenhagen, Denmark
- Principles and methods of broadband/wideband technologies: Application to fisheries acoustics, 8–14 December, Bergen, Norway

Completed course reports are available on the ICES website

The ICES Training Programme has also contributed to providing training courses for the DGMARE. This year we offered two two-day general introduction courses to stock assessment, another will be offered in December on assessment of large pelagics.

4.2.2 Training courses in 2017

Proposals for new and repeated courses are being considered. At the annual training group meeting at the ASC in September, six courses were identified to be included in

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the course programme for 2017. Dates and instructor confirmations will be posted on the ICES training website, as soon as agreements and arrangements are in place.

- Abundance estimation from fisheries acoustic surveys: an introduction (John K. Horne and Paul Fernandes)
- Stock assessment introduction (TBC)
- Management strategy evaluation (Jose de Olivera and Carryn de Moore)
- Stock assessment methods (Anne Cooper and TBC)
- Bayisian Network analysis (Laura Utsitalo and TBC)
- Approaches to integrated assessment of status and trends in marine ecosystems (Christian Mollman and TBC)

4.2.3 Proposals/initiatives for new training courses

This year, only one new course proposal was received, (Abundance estimation from fisheries acoustic surveys: an introduction, John K. Horne and Paul Fernandes). This was discussed at the training course group meeting in September, and agreed that the requirements/needs for training would be brought up at the following working group chairs meeting, to identify how the needs for courses can be best expressed in future.

4.2.4 Online Training Initiatives

In response to the SCICOM encouragement to develop online training, several initiatives were undertaken. The Training Group recognizes that participation in courses has decreased, and online training could provide a cost-effective method for reaching a wider audience for meeting the programme objectives.

The Training Group, with the support of ICES staff, has been evaluating the various approaches to online training. Experience from the past few years of this evaluation, indicates that increased expertise is required for this task. Possibly a professional in this field could be contracted. It has been decided that a separate meeting to identify the needs for online training will be held. An online training plan will be produced by winter 2017.

4.3 Publications and Communications Group (Secretariat)

4.3.1 Communications (including social media, news articles and press releases, website development, and outreach)

Social media continues to play an important role for ICES, with 6353 LinkedIn members (12% increase from September 2015); 4383 Twitter followers (84% increase from September 2015); and, 3033 Facebook "likes" (51% increase from September 2015). An Instagram account was opened at the end of August.

One reason for the spiked increase in Facebook and Twitter can be explained by us using paid promotion in social media for the first time. The ACOM and SCICOM Chair job openings appeared as promoted or suggested posts on users' social media feeds for two weeks, which resulted in users not only viewing the post but also in "liking" and "following" the ICES social media accounts.

News articles that emphasize ICES strategic areas and report on ongoing and upcoming events and meetings are a focus for the Communications team. Both May symposia (zooplankton and MSEAS) were promoted by a series of articles posted throughout the week of the events. The bi-monthly e-newsletter includes in-depth feature articles,

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written in co-operation with scientists in our network. By September, seven press releases had been sent out to the mailing list, including press from different ICES member countries. Write-ups of seven Editor's Choice articles from ICES Journal of Marine Science have been published on the website so far this year.

Together with the IT department and with the help from outside consultants, the Communications department has undertaken a website development project to update the website to responsive design. This means that the website view adjusts automatically, based on the device the user is using, be it PC, tablet, or a smartphone. The "groups" section is also getting an update, so that information that is entered in the Resources Coordination Tool (RCT) will be automatically updated on the website. Communications was also involved in the development of the ecosystem overview diagrams, which were published online at the end of August.

Data decks, a series of cards describing ICES data portals, were published in the spring. The cards are mostly used and distributed by our Data Centre. A set of images, which can be used in ICES communications, e.g. PPT presentations, outreach materials, infographics have also been developed.

The Communications department is responsible for outreach for the ASC, as well as organizing early career scientist events during the conference. A new addition to the ECS programme was a skills workshop, "Getting published", organized in cooperation with BONUS. A new science communications Open Session was scheduled, in addition to the networking meeting for communications professionals.

A Code of Conduct for sharing images and text from presentations during ICES ASC in social media was discussed. It was agreed that the Guidelines for ASC presenters (available on ICES website) should explicitly state that if ASC presenters do not wish their materials to be tweeted, photographed, etc. they need to self-identify this by including a disclaimer on their work. PUBCOM recommended that ICES have a clear, official position on this matter.

PUBCOM further recommended the creation of short (i.e. 30-second) videos with the authors of Editor's Choice articles talking about their work, in addition to the news articles currently produced. This could also be considered for press releases and In Other Words *blog posts.*

4.3.2 Review of Category 1 and Category 3 publications

Four category 1 resolutions for CRRs were discussed. PUBCOM had comments for two of the resolutions, as outlined below.

For the ICES Plankton Status Report 2015 (2016/1/SSGEPD01), PUBCOM suggested improving the title to reflect the information in the report (e.g. an atlas). The two external plankton websites, wgze.net and wgpme.net, are ICES products but are not hosted by ICES. They should be clearly identified as ICES products. The Plankton Status Report is based on data coming from WGZE members and hosted by different institutes. PUBCOM recommended a ToR for the groups to discuss how to centralize and save the data so these data can be preserved, as well as how to merge the external webpages with the ICES website.

For the Status Report on Harmful Algal Events in the ICES area (2016/1/SSGEPI03), PUBCOM noted that a scientific synthesis should be included within the report.

PUBCOM recommended SCICOM to accept all four category 1 resolutions.

Three SISP manuals were proposed for publication in the CRR series.

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SISP is a separate publication series; therefore, PUBCOM did not support these three resolutions for publication in the CRR series.

PUBCOM noted the three category 3 (ICES symposia) publication resolutions.

4.3.3 DOI (Digital Object Identifiers) project

As reported at the midterm SCICOM meeting, a contract was signed (and paid for) in October 2015 with DTU Informatics (library). ICES is licensed to mint up to 1000 DOIs per annum under the current arrangement. The Publications and IT departments have agreed to make a provision in future annual budgets to upgrade the license to unlimited minting of DOIs, as we ramp this up.

The Data Centre has implemented the database and web service that links to the SharePoint process for assigning a DOI when publishing a new document/data product, etc.

IT continues to work towards finalizing the metadata template for publications; the full metadata for all publications will now be shown on the website (previously this has been hidden).

Since the midterm SCICOM meeting, discussions regarding the DOI metadata have continued, within ICES Secretariat and PUBCOM. We are seeking a system that will maximize the citations and recognize the publications and their authors. Current metadata fields include: Name, Publication title, Publication type, Resource type, Publication year, Publication authors, Publisher (ICES), DOI/URI, Abstract, and Keywords (optional, but recommended). Once the fields are finalized, the next step will be to begin implementing the DOIs in ICES publications, on a case-by-case basis.

4.3.3.1 Expert group reports – executive summaries

PUBCOM reviewed the recommendation to SCICOM that moving forward, expert group reports will continue to contain an executive summary, but this will no longer be registered as a separate document in the library. The importance of the executive summaries was recognized. However, in an effort to make the best use of Secretariat resources and to streamline working procedures, discontinuing the practice of providing the executive summaries as separate documents was suggested. An alternate approach could be to copy/paste the summary into the release announcement email. Establishing a maximum length for the executive summaries was also suggested.

4.3.3.2 Expert group reports – author designation

A proposal regarding how authors of expert group reports are cited in the metadata was presented and reviewed.

PUBCOM recommended that ICES remains listed as the author of EG reports, in both metadata and in citations.

4.3.4 Strengthening the profile of ICES CRRs

The conclusions and suggestions outlined in the SCICOM report, "Cooperative Research Reports (CRR) strengthened profile" were reviewed by PUBCOM. While strengthening the CRR review process from one reviewer to two was considered, PUBCOM agreed this will be a challenge, as it is often difficult to secure reviewers. The ICES Secretariat will consider ways to improve the CRR review process.

A preliminary investigation was conducted to determine if the CRRs can be added to the big databases (Web of Science, scopus). It was noted that it will be difficult for ICES

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CRRs to qualify for these databases because the reports do not satisfy some key criteria, including regularity of publications, number of issues per year, international range of reviewers, etc. Authors need to be encouraged to cite the CRRs, TIMES, etc. in a standard way, with the correct authors, and as part of a series. Further exploration with Thomson Reuters is also required regarding the possibility of getting CRRs on a Web of Science index in addition to Zoological Record.

Improving the text on ICES website concerning the CRRs was discussed. ICES Secretariat will look at modifying the text, to more clearly highlight the goal of the series, and the fact that CRRs are open access and peer reviewed. ICES Secretariat will also explore ways to engage EGs/authors and their networks in promoting the CRR series.

The report further recommended that SCICOM consider if there is a need for a process for identifying expert group reports/symposia in relation to productions of CRRs that contribute to the implementation of the ICES Strategic Plan, and how to proceed with the synthesis of this information. This matter was referred to SCICOM for further discussion.

PUBCOM recommended a new, more dynamic title be considered for the ICES CRR series, and that dedicated dissemination/advertising be implemented when new CRRs are published.

4.3.5 Proposal to revise ICES citation disclaimer

A recommendation to revise the citation disclaimer in ICES publications was reviewed by the group. The following citation disclaimer was agreed in principle, with caution that the text relating to commercial use be reviewed.

"The material in this report may be reused for non-commercial purposes using the recommended citation. ICES may only grant usage rights of information, data, images, graphs, etc. of which it has ownership. For other third-party material cited in this report, you must contact the original copyright holder for permission. For citation of datasets or use of data to be included in other databases, please refer to the latest ICES data policy on the ICES website. All extracts must be acknowledged using an appropriate citation."

ICES Secretariat will revise the citation disclaimer. Once the text is finalized, it will be added to the templates for all ICES publications.

4.3.6 Feedback on ICES library search functions

Issues related to the ability to search for publications in ICES library were discussed. The Communications Officer noted specific feedback on frustrations experienced when searching for material on ICES website library. While all feedback is welcomed, not all can be addressed within the current resource framework. The Communications Officer will aim to have a meeting (focus group) with website users to identify search issues and how best to address them. Once the current website projects are completed, the Secretariat web team (Communications Officer and SharePoint Developer) will look into website search issues to determine which ones can be resolved in-house, and those that require additional resources, as well as the timeline for completing any of these updates.

4.3.7 Nomination of new PUBCOM Chair

The procedure for the nomination of the PUBCOM Chair will be decided following a review of PUBCOM ToRs and membership currently being undertaken in SCICOM.

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4.4 ASC 2016, Riga, Latvia (ICES Conference Coordinator)

Participants

By 12 September, 611 participants had registered for the 2016 ASC. (620 at the same date in 2015). On the last day of the conference, the final registration count is 661 registered participants. 50 have registered on-site. We have 37 countries represented and had 34 no-show. The early registration fee closed on 1 August to encourage participants to register early.

Oral and poster presentations

In May we had received 616 abstracts, submitted to 18 theme sessions. Following the theme session convenors' selection process, we had 321 oral presentations and 114 posters in 2016. For comparison, we had 326 oral presentations and 126 posters in 2015.

Theme session A **Fisher collected acoustic data (FCAD)** Conveners: Steve Barbeaux (USA) Martin Pastoors (the Netherlands) Sascha Fässler (the Netherlands) **16 oral presentations**	Theme session B **Predictably Irrational – a new scientific research field for the science underpinning marine-resource management** Conveners: Sarah B. M. Kraak (Germany) Dorothy J. Dankel (Norway) **13 oral, 1 poster**
Theme session C **From individuals to ecosystems: their ecology and evolution** Conveners: Anna Kuparinen (Finland) Silva Uusi-Heikkilä (Finland) **26 oral, 14 posters**	Theme session D **Ecosystem changes and impacts on diadromous and marine species productivity** Conveners: Timothy Sheehan (USA) Katherine Mills (USA) Mark Payne (Denmark) **24 oral, 5 poster**
Theme session E **The emerging science of ecological multimodel inference for informing fisheries management** Conveners: Phillip Levin (USA) Stefan Neuenfeldt (Denmark) Tessa Francis (USA) **6 oral presentations**	Theme session F **Integrated ecosystems assessment and decision support to advance ecosystem-based fisheries management** Conveners: John Pope (UK) Lena Bergström (Sweden) Melania Borit (Norway) **24 oral, 25 poster**
Theme session G **The inshore challenge – management of recreational and commercial fisheries accounting for social benefits, economic value, and biological sustainability** Conveners: Kieran Hyder (UK) Harry Strehlow (Germany) Estanis Mugerza (Spain) Maria Spedicato (Italy) **24 oral, 12 poster**	Theme session H **Looking backwards to move ahead: how the wider application of new technologies to interpret scale, otolith, statolith and other biomineralised age-registering structures could improve management of natural resources** Conveners: Ewan Hunter (UK) Vladimir Laptikhovsky (UK) Philip Hollyman (UK) **29 oral, 14 posters**

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Theme session I
Seasonal-to-decadal prediction of marine systems: opportunities, approaches, and applications
(Co-sponsored by PICES)
Conveners: Mark Payne (Denmark)
Desiree Tommasi (USA)
Alistair Hobday (Australia)
22 oral presentations

Theme session J
What is a good pelagic habitat?
Conveners: Mark Dickey-Collas (ICES)
Abigail McQuatters-Gollop (UK)
Verena Trenkel (France)
5 oral, 3 posters

Theme session K
Make marine sediment extraction sustainable by mitigation of related processes with potential negative impacts
Conveners: Ad Stolk (the Netherlands)
Keith Cooper (UK)
Michel Desprez (France)
15 oral, 2 posters

Theme session L
Integration challenges in maritime spatial planning – approaches, science gaps, and communication demands
Conveners: Andreas Kannen (Germany)
Michael Gilek (Sweden)
18 oral, 8 posters

Theme session M
The role of zooplankton in exploited ecosystems: top-down and bottom-up stresses on pelagic food webs
Conveners: Angus Atkinson (UK)
Webjoern Melle (Norway)
Piotr Margoński (Poland)
19 oral, 9 poster

Theme session N
Long-term phytoplankton trends in the ICES area: regional distribution, bloom dynamics and response to environmental drivers
Conveners: Alexandra Kraberg (Germany) Eileen Bresnan (UK)
Marie Johansen (Sweden)
10 oral, 1 poster

Theme session O
"When is enough, enough?" Methods for optimising, evaluating, and prioritising of marine data collection
(Co-sponsored by PICES)
Conveners: J.H. Vølstad (Norway)
Mike Armstrong (UK)
Marie Storr-Paulsen (Denmark)
Robyn Forrest (Canada)
27 oral, 10 poster

Theme session P
Arctic Ecosystem Services: Challenges and Opportunities
(Co-sponsored by AMAP and EU-PolarNet)
Conveners: Candace Nachman (USA)
Susanne Kortsch (Norway)
13 oral, 3 posters

Theme session Q
Harvest control rules: beyond FMSY for an ecosystem approach to fisheries?
Conveners: Didier Gascuel (France)
Lisa Borges (Belgium)
Dave Reid (Ireland)
12 oral, 4 posters

Theme session R
Integrating humanities and social sciences into marine ecosystem management - first steps
Conveners:
Jörn Schmidt (Germany)
Patricia M. Clay (USA)
18 oral, 3 posters

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Registration

The registration fee included morning and afternoon coffee. Lunches were not included this year. This model was tested and deemed successful in 2014, and 2015 so was used again this year.

This year, the standard registration fee had been increased to 190 EUR (260 EUR after 1 August). Student registration remained at 70 EUR.

Travel funds

24 successful candidates received travel funds from ICES. Most of them were first time participants. In total funds amounting to 10,000 Euro were distributed this year.

Early Career Scientists events at the ASC 2016

This year, three separate events were organised for the Early Career Scientists: a mentor programme, a two-hour 'skills workshop', and a two-hour career chat. Each event was very popular and had full or good participation.

29 ECS signed up for the mentor programme with six mentors volunteering to meet up and guide their mentees through the ASC. The BONUS/ICES skills workshop on "*how to get published*", had 70 participants (full capacity) coming to hear three speakers (Howard Browman, Jacob Carstensen on do's and don'ts of scientific writing, and Line Reeh on how to get your work noticed after it has been published). And finally, 25 ECSs turned up for the career chat which had seven senior scientists volunteering to engage with young scientists for an informal chat during lunch.

In general, the feedback received from the ECSs is very good. According to the feedback, the mentor programme makes young scientists feel welcome at an otherwise big conference full of participants with loads of experience and knowledge of ICES. Mentors were found to be inspiring, helpful and good at guiding their mentees through the ASC. It was also deemed useful to have a pre-defined group of peers to meet up with and discuss shared research interests.

Participants found the topic of the skills workshop very interesting and felt that they gained new skills and insights. The speakers were well chosen, although some overlapping of content especially between two speakers could have been avoided. The third talk on how to get your work noticed after it has been published (Line Reeh, Communications Officer at DTU Aqua) was very popular. There is room for improvement though: the tight schedule during a 2-hour lunch break did not leave enough room for detail and discussions.

The Career Chat received good feedback as well. The ECS found the set-up (round tables, plenty of time for in-depth discussions, informal atmosphere) excellent, and the senior scientists open and very helpful.

Social arrangements

Our Latvian hosts kindly invited all conference participants to a lavish conference opening reception on the evening of Monday 19th September.

The poster session was held on Tuesday 20 September, in the Hall 1 of the conference centre. We have 114 posters on the programme, and had very few no shows. Two drinks tickets per person were distributed, and cash bar was available.

Wednesday evening also saw the launch of Games night, *Help us avoid the tragedy of the commons and win prize money doing it!*

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The conference dinner was held at a traditional Latvian restaurant, with a buffet of Latvian food and entertainment from a local folk pop band, and an ICES cover of Puff the Magic Dragon! Tickets cost 40 EUR, and 166 tickets (max capacity) were sold out by Thursday noon.

Conference material

The ASC information booklet was available in the conference bags. The ASC website has been remodeled to be 100% mobile friendly, and includes the programme, theme session timetables and practical information.

Because of the mobile friendliness of the site, it was decided not to invest in an app this year.

Abstracts will be made available online, to the public, with ISBN numbers, in a few weeks.

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5 Reports of Strategic Initiatives

5.1 ICES/PICES Strategic Initiative on Climate Change effects on Marine Ecosystems (SICCME; Myron Peck, Germany, John Pinnegar, UK, Anne Hollowed, USA, PICES, and Shin-ichi Ito, Japen, PICES)

A roadmap has been developed to enable researchers associated with SICCME to produce a broad range of scientific publications that can contribute to writing groups preparing the 6th Assessment Report of the IPCC. This work is proceeding in four phases: Phase 1) identification of modelling teams; phase 2) harmonizing future scenarios to be investigated; Phase 3) reporting on progress and comparing results at dedicated workshops and symposia; Phase 4) publishing results by the end of 2018.

The first two phases are underway. A dedicated workshop on modelling climate change impacts on fish and fisheries in Seattle in August 2015 identified 14 potential regions where there was sufficient data to model the effects of climate change on fish and fisheries. Stemming directly from recommendations of that workshop, the SICCME convened a socio-economic workshop in June 2016 to address the range of possible management responses. That workshop (The ICES/PICES Workshop on Economic Modelling of the Effects of Climate Change on Fish and Fisheries (WKSICCME_Econ) was chaired by Alan Haynie (USA), John Pinnegar (UK), Lisa Pfeiffer (USA), Mitsutaku Makino (JPN), Jörn Schmidt (DE), and Sophie Gourget (France) met in Brest, France and was attended by35 scientists from >9 countries. Alternative, future scenarios have been produced and are being discussed.

In parallel, funding has been procured by several groups involved in SICCME to allow regional modelling to move forward. These projects include 'CERES' (2016-2020) in Europe, COCA in the NW Atlantic and ACLIM in the NE Pacific. SICCME members are linked to a variety of other climate assessment / modelling activities. Two additional workshops were convened to provide status reports on regional modelling activities. A 1-day ICES/PICES workshop was convened directly after the 2016 ASC: Modelling Effects of Climate Change on Fish and Fisheries (WKSICCME-I), chaired by Anne Hollowed (USA), John Pinnegar (UK), Myron Peck (DE), and Mark Payne (DK). A second, sister workshop will be convened by the SICCME in association with the Annual Science Conferences of PICES (to be held in November 2016).

Contributing to this overall vision of consolidating projection modelling of fish and fisheries across the world's oceans have been i) ICES-PICES SICCME theme sessions such as Session I at the 2016 ASC in Riga co-convened by Mark Payne (Denmark) Desiree Tommasi (USA) and Alistair Hobday (Australia), ii) active involvement of SICCME members in the upcoming workshop on changes in fish distribution (WKFISHDISH) to be held in November 2016 in Copenhagen, and iii) recruitment of new SICCME members, particularly those acting as PIs ofongoing, large-scale programs making short-, medium-, and long-term climate projections.

Activities in 2017-2018

- 1-day workshops will be held in connection to the 2017 ASC of both ICES and PICES. Resolutions are under preparation for these workshops. These workshops will be a platform for comparison of projections of climate change impacts on fish and fisheries stemming from different regions.
- ICES-PICES SICCME submitted a proposal for a theme session at the 2017 ICES ASC in Ft. Lauderdale, Florida, to highlight ongoing regional modelling

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projecting impacts on fish and fishery-dependent communities with emphasis on the representative fishing pathways (RFPs) needed to fully depict the range of possible mitigation scenarios that could be considered by managers. The proposed co-conveners are Jon Hare (USA), Myron Peck (Germany) and John Pinnegar (UK). An additional ICES PICES SICCME theme session is planned to be submitted for the 2017 PICES ASC.

- SICCME plans to convene a workshop in Copenhagen in late spring 2017 to discuss methodology for rapid climate vulnerability assessments for Europe. A resolution for this workshop is being developed and will be submitted soon.
- SICCME co-chairs (Anne Hollowed, Myron Peck, and John Pinnegar) form part of the Scientific Steering Committee for the 4th Effects of Climate Change on the World's Oceans Symposium co-sponsored by ICES-PICES and the IOC-UNESCO. Planning is underway for this upcoming event to be held May 2018 in Washington DC. This event and the publications stemming from it mark Phases 3 and 4 or the current roadmap developed by the ICES-PICES SICCME.

5.2 Strategic Initiative on Biodiversity Science and Advice (SIHD; Jörn Schmidt, Germany, Eva-Lotta Sundberg, Sweden, David Goldsborough, the Netherlands

SIHD had its inaugural meeting at the ASC 2015 and started to discuss on how to operate. This discussion was continued at the Workshop on Activity Planning of SIHD (WKAPSIHD) in IJmuiden, 12th and 13th January 2016 and led to concrete actions (see 3 SIHD Actions). The main questions, which drove the discussion, were:

1) Which participatory processes are available or need to be established to engage across disciplines and involve the wider civil society?

2) How could an integrated, interdisciplinary discourse in support of an effective communication between human, social and natural science look like?

3) What are key components of IEAs and how can the IEA work benefit from the involvement of the humanities and social sciences?

4) Which social, cultural and economic indicators and models are available or need to be developed and how could the use of empirical quantitative and qualitative methods to characterize the state of and changes in the human dimension of ecosystem-based management be extended?

SIHD met at the ASC on Thursday, 22 September, in Riga to update on the activities and discuss further activities.

A key conclusion is that it needs to be recognized that the social sciences have a similar breadth in disciplines as the natural sciences and the expertise needed depends on the topic addressed (and not to state: 'we need someone from the social sciences'). Interdisciplinary cooperation needs time as scientists from different disciplines need to learn and understand each other's language, concepts and way of working. The same is even truer in trans-disciplinary research, where the scientists need to understand the view of the stakeholders and the stakeholders the way science is working. Visualization and role-play might be a way of communication here, but certainly communication and the fora in which discus-sion takes place are important. Social science disciplines and also the humanities offer a lot of insight into how humans act in a given system. These insights are gained with the help of a large variety of different methods, some quantitative, but some also qualitative.

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The first activity carried out was an online questionnaire on the current activities carried out by expert groups, which already integrate different disciplines from natural and social sciences and humanities and to explore where need is perceived. It further assessed perceived obstacles and support needs to integrate different disciplines within ICES expert groups. The results of the survey was presented at the 2016 ASC and a short summary report will be submitted to SCIOM, ACOM and Council.

The second activity was the development of an outreach strategy, which involves both the inward looking aspects on how to communicate within ICES and between expert groups as well as how to reach out and connect to other organizations. The latter point will be particularly worked on with respect to upcoming conferences. The activities at the ICES ASC 2016 included buttons and stickers (see layout in annex 4). The buttons were distributed to those participants, which showed an integration of natural and social sciences and humanities or engaged in innovative ways with stakeholders in their research. The stickers were used to highlight posters in the same way. Both worked very well in making the initiative and ICES visible, not only at the conference, but also via social media to the outside.

The MSEAS conference was a brilliant forum to investigate the breadth of on-going integrative work and to communicate the activities of the Strategic Initiative to a broader audience. At the conference two meetings were held, which took advantage of the presence of different organisations, programmes and projects, which are also engaged in integration of natural and social sciences and the humanities. It was concluded, that an umbrella network would help in communicating between different actors and specifically to reach out to communities, which are currently not well connected.

Contact has been established with the organizers of the MARE conference 2017. Suggestions were made to propose a couple of session, focussing on the integration of social and natural sciences and to suggest a key note speaker from the natural sciences at the MARE conference (normally a social science conference).

The concrete issue of integration in the context of Integrated Ecosystem Assessments will also be taken up in two upcoming workshops, WKIDEA (ACOM/SCICOM Workshop on Integrated Ecosystem Assessment Methods) and WKINWA (Workshop on IEA in the Northwest Atlantic).

Much of the work will be done by correspondence and inter sessional. However to ensure the possibility of physical meetings, including a broad attendance, the possibilities of further funding, e.g. through a COST action, will be explored.

5.2.1 Recommendations

RECOMMENDATION	ADRESSED TO
1. Further promote the engagement of human and social sciences in all structural layers of ICES.	ICES leadership
2. ICES leadership should establish and strengthen working relationships with communities, organizations and societies in the realm of social sciences and humanities	ICES leadership
3. develop support for increased transparency between groups, to be available for all group members. For example a web-page built on a database where the work of all	ICES secretariat

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groups can be searched and an expert database, e.g. similar to www.oceanexpert.net	

5.2.2 SIHD Actions

ACTION	RESPONSIBLE
Systematically contact all ICES EGs (chairs) to explore where there is already context for SIHD. Understand current needs and demand of 'human' disciplines Understand how the integration of social scientists can happen or work How could we better link those social scientists, who already are engaged within ICES	Eva-Lotta, Jörn
Explore further opportunities for funding, e.g. COST action	Jörn, Jan Jaap, David, Andreas, Christine
Demonstrate to SCICOM/ACOM/Council/us the development of an IEA using WGNARS as a case study; use graphics, simple language to communicate efficiently with the target groups	David, Geret, Christine
Outreach to other organisations/venues/conferences: MSEAS, MARE,	Olivier and Doug, Marloes
Produce outreach material, poster, leaflet, etc.	Nathalie, Katell, Christine
ASC theme session structure, Theme session timing with other (similar) session	Jörn, Sarah
Interact with groups like STECF to understand what the issues in integrating the Human Dimension are	Sarah, David, Katell
How could advice on Human Dimension issues (or within the ecosystem approach) could look like (e.g. produce demonstration advice)	Marloes, Jan Jaap,

5.2.3 Terms of Reference for 2016

2015/2/ACOMSCICOM05 The ICES Strategic Initiative on the Human Dimension in Integrated Ecosystem Assessments (SIHD), chaired by David Goldsborough (Netherlands), Eva-Lotta Sundblad (Sweden), and Jörn Schmidt (Germany), will conduct activities over the period 2015 to 2018, coordinated by a core group to:

i) Strengthen the expertise in human and social sciences by identifying and linking activities undertaken within ICES

ii) Strengthen or develop links with existing organisations and initiatives outside ICES dealing with human and social science in the marine realm

iii) Provide a point of entry for non-natural scientist to participate in ICES IEA work

iv) Develop ways to integrate the humanities and social sciences within Inte-grated Ecosystem Assessment groups by working with social scientists to:

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a. Make use of existing and further developing participatory processes to engage across disciplines and involve the wider civil society

b. Specify key components of ICES IEA and identify how this work can benefit from the involvement of the humanities and social sciences

c. Develop an integrated, interdisciplinary discourse in support of an ef-fective communication between human, social and natural science

d. Make use of existing and further developing social, cultural and eco-nomic indicators and models and extending the use of empirical quantitative and qualitative methods to characterize the state of and changes in the human dimension of ecosystem-based management

v) Identify approaches on how to enable the integration of this knowledge in ecosystem based management and how to give advice

5.3 Strategic Initiative for Stock Assessment Methods (Steve Cadrin, USA, Ciaran Kelly, Ireland)

The ICES Strategic Initiative for Stock Assessment Methods (SISAM) was designed to assure that scientists can apply the best stock assessment methods for developing management advice for fisheries. The first stage of SISAM culminated in a simulation-based workshop to evaluate performance of stock assessment methods and 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, further evaluation of model performance, and transition to a Global Assessment Methods Expert group (GAME).

In the second phase of SISAM, progress was made in global coordination of advancement in stock assessment methods, and development of best practices guidance for stock assessment methods.

SISAM leadership organized three linked sessions for the 2016 world fisheries congress (Busan Korea). The sessions investigated the current state of the art for stock assessment, the development for new methods (including data poor, and spatial stock assessments) and the use of environmental information in fisheries management. Although no formal discussions on GAME took place, many WFC participants expressed an interest in joining GAME once it was inaugurated.

SISAM leadership submitted a proposal for an open session to summarize progress toward SISAM objectives, present a plan for transition to GAME. In an effort to attract global stock assessment experts, SISAM leadership also proposed a theme session. Other proposed theme sessions (12 - Quantifying and communicating uncertainties in stock assessment; 25 - Designing fishery stock assessments: should they be simple, complex, or include an ensemble of structural assumptions?) may also help to attract active stock assessment scientists to the ASC and the open session discussion.

SISAM leadership is involved in the Center for the Advancement of Population Assessment Methodology (CAPAM) and related Good Practices Guides on selectivity, growth modelling, and data weighting. A CAPAM workshop on "Data conflict and weighting, likelihood functions, and process error" (October 2015, La Jolla, USA) provided advice and guidance on practices for using data in fishery assessments. The 5-day meeting included an applied modeling session, keynote and research presenta-

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tions, and focused discussions. Major topics included data conflict and weighting, likelihood functions, temporal variation, model misspecification, wildlife population assessment methods, data conflict and weighting in stock assessments using the Stock Synthesis modeling framework and related simulation methods/software. Scientists presented work from both ongoing research efforts and completed studies. A special issue in the journal Fisheries Research is planned for papers developed from the workshop. The next CAPAM workshop will be on "Recruitment: theory, estimation, and application in fishery stock assessment and management" (30 Oct-3 Nov 2017, Miami USA). The workshop will focus on underlying processes, the stock-recruitment relationship, temporal variation, spatial considerations, and management implications. The workshop will include a Stock Synthesis tutorial and applications on tuna stock assessments. The following topic is tentatively on natural mortality. The change in venue for CAPAM reflects a transition to a more global approach, which is entirely consistent with SISAM plans. Although the governance of CAPAM has been largely by the Inter-American Tropical Tuna Commission and the NOAA Southwest Fisheries Science Center, CAPAM workshops draw on global expertise and had global relevance. Both SISAM and CAPAM have most of the RFMOs, and we hope to merge towar a global governance.

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Annex 1: 2016 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*		
ACOM	Advisory Committee	Eskild Kirkegaard, Denmark	TBD
SCICOM	Science Committee	Yvonne Walther, Sweden	TBD
SSGEPD	Steering Group on Ecosystem Processes and Dynamics (SSGEPD)	Graham Pierce, UK	Silvana Birchenough, UK
SSGIEA	SCICOM/ACOM Steering Group on Integrated Ecosystem Assessments (SSGIEA)	Dave Reid, Ireland	Mette Skern Mauritzen, Norway
SSGIEOM	Steering Group on Integrated Ecosystem Observation and Monitoring (SSGIEOM)	Nils Olav Handegard, Norway	Sven Kupschus, UK
BSG	Benchmark Steering Group (BSG)	Carmen Fernandez, Spain Jörn Schmidt, Germany	TBD
PUBCOM	Publications and Communications Group	Audrey Geffen, Norway	TBD
Established	*Expert Groups*		
SSGEPD	Working Group with the Aim to Develop Assessment Models and Establish Biological Reference Points for Sea Trout (Anadromous *Salmo trutta*) Populations (WGTRUTTA)		Johan Höjesjö*, Sweden, and Name*, Country (TBD)
SSGEPD	Working Group on Seasonal-to-Decadal Prediction of Marine Ecosystems (WGS2D) (approved intersessionally in 2016)		Mark Payne*, Denmark
SSGEPI	ICES-ICCAT Methods Working Group (MGWG)		Arni Magnusson*, Iceland (ICES), and Name*, Country (ICCAT representative, TBD)
Change of Chairs	*Expert Groups*		
SSGEPD	Working Group on Cephalopod Biology and Life History (WGCEPH)	Marina Santurtun, Spain (outgoing Co-Chair)	Graham Pierce (incoming Co-Chair)
SSGEPI	Working Group on Introduction and Transfer of Marine Organisms (WGITMO)	Henn Ojaveer, Estonia	Cynthia McKenzie*, Canada
SSGEPI	Working Group on Marine Planning and Coastal Zone Management (WGMPCZM)	Andreas Kannen, Germany	Matthew Gubbins*, UK, and Andreas Morf*, Swede
SSGEPI	Working Group on Spatial Fisheries Data (WGSFD)	Josefine Egekvist, Denmark	Niels Hintzen*, the Netherlands, and Christian von Dorrien*, Germany

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Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGEPI	Working Group on Multispecies Assessment Methods (WGVHES)	Daniel Howell, Norway (outgoing Co-Chair)	Alexander Kempf*, Germany (incoming Co-Chair)
SSGIEA	Working Group on the Integrated Assessments of the Barents Sea (WGIBAR)	Edda Johannesen, Norway, Yuri Kovalev, Russia	Elena Eriksen, Norway, Anatoly Filin, Russia
SSGIEA	Working Group on North Sea Integrated Assessments (WGINOSE)		Erik Olsen, Norway (incoming co-chair)
SSGIEA	Working Group on Comparative Analyses between European Atlantic and Mediterranean marine ecosystems to move towards an Ecosystem-based Approach to Fisheries (WGCOMEDA)		Christian Möllmann, Germany (incoming co-chair)
SSGIEOM	Working Group on Integrating Surveys into ecosystem monitoring programmes (WGISUR)	Ingeborg de Boois, The Netherlands	Ralf van Hal*, The Netherlands
SSGIEOM	Working Group on Fisheries, Acoustics, Science and Technology (WGFAST)	Verena Trenkel, France	Richard O'Driscoll, New Zealand
SSGIEOM	Working Group on Fishing Technology and Fish Behaviour (WGFTFB)	Pingguo He, USA (outgoing co-chair)	Haraldur A. Einarsson*, Iceland (incoming co-chair)
SSGIEOM	Working Group on Electrical Trawling (WGELECTRA)	Bob van Marlen, The Netherlands	Adriaan Rijnsdorp*, The Netherlands
SSGIEOM	Working Group on Beam Trawl Surveys (WGBEAM)	Kelle Moreau, Belgium	Holger Haslob*, Germany
Dissolved	***Expert Groups***		
SSGEPI	Workshop on Understanding the Impacts and Consequences of Ocean Acidification for Commercial Species and End-users (WKACIDUSE) – **to be dissolved after the meeting in December 2016**		Silvana Birchenough (UK, ICES), Sam Dupont (Sweden, AMAP) and Ono-san (Japan, PICES) – **possible Change in Chairs**
SSGEPI	Bayesian Belief Network Case Studies (WKBNCS)		Roland Cormier, Canada, and Vanessa Stelzenmüller, Germany
SSGEPI	ICES/PICES Workshop on Economic Modelling of the Effects of Climate Change on Fish and Fisheries (WKeconSICCME)		Alan Haynie, USA; John Pinnegar, UK; Lisa Pfeiffer, USA; Mitsutaku Makino, Japan; Jörn Schmidt, Germany; and Sophie Gourguet, France
SSGEPI	Workshop on Activity Planning of SIHD (WKAPSIHD)		Eva-Lotta Sundblad, Sweden, David Goldsborough, the Netherlands, Jörn Schmidt, Germany
SSGEPI	Working Group on Aquaculture (WGAQUA)		
SSGEPI	(former) Working Group on Methods of Fish Stock Assessment (WGMG)		
SSGEPD	ICES/PICES Workshop on Phase 1: Modelling Effects of Climate Change on Fish and Fisheries (WKSICCME1)		Anne Hollowed, USA, John Pinnegar, UK, Myron Peck, Germany, and Mark Payne, Denmark

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Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGEPD	Workshop on Sea Trout 2 (WKTRUTTA2)		Ted Potter, UK, and Johan Höjesjö, Sweden
SSGEPD	Workshop on Eel Stocking (WKSTOCKEEL)		Derek Evans, UK
SSGIEA	Workshop on developing integrated advice for Baltic Sea ecosystem-based fisheries management (WKDEICE)	Rudi Voss, Germany, Christian Möllmann, Germany, and Maciej Tomczak, Sweden	
SSGIEOM/BSG	Second workshop on the impact of ecosystem and environmental drivers on Irish Sea fisheries management (WKIrish2)	Mike Armstrong, UK,	
SSGIEOM	Workshop on cost benefit analysis of data collection in support of stock assessment and fishery management (WKCOSTBEN)	Mike Armstrong, UK and Jon Helge Vølstad, Norway	
SSGIEOM	Workshop to establish reporting guidelines from survey groups (WKSUREP) *[to be dissolved after December 2016]*	Nils Olav Handegard, Norway, and Marie Storr Paulsen, Denmark	
SSGIEOM	Workshop on Age Reading of Greenland Halibut (*Reinhardtius hippoglossoides*) (WKARGH)	Karen Dwyer, Canada & Gróa Pétursdottír, Iceland	
SSGIEOM	Workshop on Age estimation of Whiting (*Merlangius merlangus*) (WKARWHG2) *[to be dissolved after the meeting on 22–24 November 2016]*	Joanne Smith UK & Lotte Worsøe Clausen, Denmark	
SSGIEOM	Workshop on Age estimation of European anchovy (*Engraulis encrasicolus*) (WKARA2) *[to be dissolved after the meeting on 28 November – 2 December 2016]*	Andres uriarte, Spain, Begoña Villamor, Spain & Gualtiero Basilone, Italy	
SSGIEOM	Workshop on Growth-increment Chronologies in Marine Fish: climate-ecosystem interactions in the North Atlantic (WKGIC2)	Bryan Black, USA, Christoph Stransky, Germany and Beatriz Morales-Nin, Spain	
SSGIEOM	Workshop on Age estimation of Sprat (*Sprattus sprattus*) (WKARSPRAT) *[to be dissolved after the meeting on 15– November 2016]*	Julie Coad Davies, Denmark & Claire Moore, Ireland	
SSGIEOM	Workshop on Fish Condition (WKFICON) *[to be dissolved after the meeting on 17–18 November 2016]*	Josep Lloret, Spain Claire Saraux, France & Pierluigi Carbonara, Italy	

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Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGIEOM	Workshop on *Nephrops* burrow counting (WKNEPS) *[to be dissolved after the meeting on 9–11 November 2016]*	Ana Leocadio, UK and Jennifer Doyle, Republic of Ireland	
SSGIEOM	Workshop to Plan and Integrate Monitoring Program in the North Sea in the 3rd quarter (WKPIMP)	Andrew Kenny, UK and Ingeborg de Boois, the Netherlands	
SSGIEOM	EFARO/ICES meeting on Cooperation in Surveys and Data Collection (EIMSD)	Tammo Bult, EFARO, and Eskild Kirkegaard, ICES	
SSGIEOM	Workshop on Age estimation of Norwegian Spring Spawning Herring between Norway, Denmark, Iceland and the Faroe Islands (WKNSSAGE)	Jane A. Godiksen, Norway	
New Workshops			
SSGEPD	Workshop on Predator-prey Interactions between Grey Seals and other marine mammals (WKPIGS)		Andrew Brownlow*, UK; Nora Hanson*, UK; Jan Haelters*, Belgium; and Abbo van Neer*, Germany
SSGEPD	Workshop on Biological Input to Eastern Baltic Cod Assessment (WKBEBCA)		Michele Casini*, Sweden, and Margit Eero*, Denmark
SSGIEA	Workshop on Spatial Analyses for the Baltic Sea 2 (WKSPATIAL2)		Michele Casini, Sweden, and Stefan Neuenfeldt, Denmark
SSGIEA	Workshop on IEA in the Northwest Atlantic (WKINWA)		David Goldsborough*, the Netherlands
SSGIEA	ACOM/SCICOM Workshop on Integrated Ecosystem Assessment Methods (WKIDEA)		David Reid (Ireland) and Jörn Schmidt (Germany)
SSGIEOM	Workshop on Technical Development to Support Fisheries Data Collection (WKSEATEC)		Dave Stokes
SSGIEOM	Workshop on Collecting Quality Underwater Acoustic Data in Inclement Weather (WKQUAD)		Matthias Schaber*, Germany, and Mike Jech*, USA
SSGIEOM	Joint Workshop of WGFTFB and WGFAST (JFTAB)		Paul Winger*, Canada, and Chris Wilson*, USA
SSGIEOM	ICES Workshop on Implementation and Use in IBAS of a New Common Acoustic Database (WKBIFS-ACOU)		Hjalte Parner*, ICES Secretariat, and Olavi Kaljuste*, Sweden
SSGIEOM	Workshop on monitoring technologies for the mesopelagic zone (WKMESO)		Benjamin Planque*, Norway + **TBD**
SSGIEOM	Workshop on North Sea Herring larvae surveys, data needs and execution (WKHERLARS)		Cindy van Damme*, The Netherlands and Richard D.M. Nash*, Norway

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Type of Action	Name	Chair – Outgoing	Chair – Incoming
SSGIEOM	Workshop to develop abundance and biomass survey indices in Datras for the stocks assessed by the Bay of Biscay and Iberian waters Ecoregion (WKDABSI)		Lisa Readdy*, UK and XXXX
SSGIEOM/BSG	Stock Assessment Workshop for Irish Sea stocks (WKIrish3)		Chair Hans Gerritsen, Ireland + External chair
SSGIEA	Workshop on Developing Integrated Advice for Baltic Sea Ecosystem–Based Fisheries Management 2 (WKDEICE2)		Maciej Tomczak, Sweden, Rudi Voss, and Christian Möllmann, Germany

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Annex 2: Performance evaluation of Science Implementation– "gut feeling"revisited 2016

The document includes expert evaluations of the SCICOM Steering Group Chairs:

- Graham Pierce, SSG Ecosystem Processes and Dynamics (SSGEPD)
- Henn Ojaveer, SSG Ecosystem Pressures and Impacts (SSGEPI)
- Dave Reid, SSG Integrated Assessments of Ecosystems (SSGIEA) – not available but will be filled in shortly
- Nils Olav Handegaard, SSG Integrated Monitoring and Observation (SSGIEOM)

Summary

The gut feeling exercise was introduced in 2014 to give a brief overview of the status of the implementation of the Science Priorities under the Science Implementation Plan that support ICES Strategic Plan (2014-2018)

The revisited evaluation 2016 is to show the midways status of implementation.

The scale of scoring the implementation was established as follows.

1 Not Started

2 Just Started

3 Some Progress

4 Good Progress

5 Doing Well

The result of the evaluation is shown in the table below. The expert evaluation of 31 priority areas shows increased scores in 16 areas (marked in green in the table below). Priorities areas scoring some progress to doing well (3-5) are 22 (16 in last evaluation) and areas scoring 4-5 are 11 (4 in last evaluation).

The evaluation is considered to be conservative and the progress is in fact more extensive. This is due to that the priority areas are assigned to a specific SSG. A more extensive mapping of the implementation started in 2015 by initiative of SCICOM. In this living document the crosscutting effects are clearer and give a fuller picture of the implementation of the Priority Areas. The major strategic changes occur in the Multiannual evaluation of the Expert groups including renewing of the Terms of Reference.

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SSGEPD	Priority area	2014	2016	Comments
Describe and quantify the state of North Atlantic Ocean regional systems	1. Assess the physical, chemical and biological state of regional seas and investigate the predominant climatic, hydrological and biological features and processes that characterise regional ecosystems	3	4	In general I think we are making good progress, especially through groups like WGBIODIV and BEWG. Topics like climate change and indicators are well covered.
	2. Quantify the nature and degree of connectivity and separation between regional ecosystems	1	1	Arguably some relevant information is collected but I don't see anyone focusing on it
Understand and forecast the impact of climate variability and change on marine ecosystems	3. Quantify the different effects of climate change on regional ecosystems and develop species and habitat vulnerability assessments for key species	3	4	
	4. Understand the influence of climate impacts across a range of temporal and spatial scales, from local to global and from seasonal to multidecadal and identify indicators of climate driven biotic responses and forecast trajectories of change	3	4	
Resolve and quantify ecological processes in marine ecosystems, including modelling the dynamics of food webs and their responses to environmental change	5. Quantify the role of structural and functional diversity in marine ecosystems in providing stability and resilience	1	3	For some of the more basic knowledge on structure and function coverage is more patchy but arguably significant. This is also true of work on ecosystem services although only one group focuses on ES
	6. Investigate linear and nonlinear ecological responses to change, the impacts of these changes on ecosystem structure and function and their role in causing recruitment and stock variability, depletion and recovery.	3	3	

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	7. Develop end to end modelling capability to fully integrate natural and anthropogenic forcing factors affecting ecosystem functioning	1	2	I am not sure anyone is doing true end-to-end models but many components are modelled
Quantify the relationship between habitat condition, ecological processes and the provision of ecosystem goods and services	8. Define and quantify north Atlantic Ecosystem Goods and Services, model their dependence on ecosystem processes and habitat condition and their social, economic and cultural value.	1	2	
	9. Identify indicators of ecosystem state and function for use in the assessment and management of ecosystem goods and services	2	3	

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SSGEPI	Priority area	2014	2016	Comments
Estimate long term trends of human	10. Develop historic baseline of population and community structure and production to be used as a basis for population and system level reference points.	2	3	WGHIST has identified useful datasets. Support for storage in ICES data center is needed. Next step is baseline development. The next 3 yr of this group should be related specifically to this TOR and perhaps be named something like WG Historical baselines
Understand, quantify and mitigate	11. Develop methods to quantify multiple direct and indirect impacts from fisheries as well as from mineral extraction, energy generation, aquaculture and other anthroponegic activities and estimate the vulnerability of ecosystems to such impacts.	3	3	Strong development of modelling of impacts from fisheries. Contaminant impacts has started to developed treshholds and is progressing steady and well.
	12. Develop approaches to mitigate impacts from these activities, particularly reduction of non target mortalities and enhancement/restoration of habitat and assess the effects of these mitigations on marine populations	2	2	Development is made in ICES but not particularly in EPI groups. Work has been done in relation to discards. WGSAM investigates impacts of by-catch on other target species through F. WGVHES has worked on the role of coastal habitats on exploited populations. We may get something related to essential fish habitat from that group. Score would be higher if other activities were evaluated . Remove priority from SSGEPI?
	13. Develop indicators of pressure on populations and ecosystems from human activities such as eutrophication, contaminants and litter release, introduction of alien species and generation of underwater noise.	3	4	With the recent movement of ITMO and BOSV into EPI this work will progress faster in the steering group. Aquaculture groups are progressing in terms of that particular type of eutrophication
Provide evidence in support of sustainable management of ecosystem goods and services	14. Evaluate ecological, economic and social trade offs between ecosystem protection and sustainable use to advise on management of human activity in marine ecosystems	1	1	SGSA which looks and social dimension of aquaculture but it is in developing. WGMARS moved to IEA. Reevaluate the SSG TORs
	15. Develop tactical and strategic models to support short	5	5	Tactical fisheries models both single and multispecies are well covered. Good work associating coastal habitats

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	and long term fisheries management and governance advice and increasingly incorporate spatial components in such models to allow for finer scale management of marine habitats and populations			with exploited population dynamics. Spatial aspects are well considered in SIMWG and some nations (e.g. Iceland) has strong spatial aspects to their stock assessment which can make appearances in WGSAM. Support for WGMG to make sure it continues to be important and it is key to this SSG TOR.
	17. Develop science in support of advisory needs in marine aquaculture systems, minimizing environmental impacts and integrating other marine sectors.	3	4	Primarily in WGAQUA, potential expansion but WGAQUA is actually spinning off TORS and workshops related to these areas. I do not see a strong need to change in this area, it is coming along as long as we continue to support the group.

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SSGIEA	Priority area	2014	2016	Comments
Develop a scoping process to identify objectives to guide IEA's in ICES regional Seas	18. Identify objectives for IEA's that address ecosystem stability and health, taking cognizance of ecological, social and economic sustainability goals as well as multi scale issues.	4	4	All IEAs now have a series of objectives either designed in advance, or as a product of the analyses themselves highlighting the key pressures on the ecosystem. Social and economic sustainability goals form elements of the IEA in a number of regions, particularly in developing conceptual models around this aspect. In addition WGMARS with WGNARS & WGINOSE have that as a key objective vi a dedicated workshop WKINWA.
	19. Identify issue based ecosystem questions relevant to science and management needs that can be addressed by developing IEA's	2	3	This is now a component of all IEAs. WKDEICE was set up to deliver this in the Baltic, and WGMSFDemo for MSFD based advice in the Celtic Seas. Other IEAs have incorporated in their ongoing work.
	20. Provide priorities and specifications for data collection frameworks supporting IEA's.	3	3	This is a stated aim, of the IEA groups, but has not been developed further yet. Recent work in WGEAWESS has shown the potential to identify key sector – pressure – ecosystem state linkages that can be used to identify the main areas of concern and hence the data needs, or improvement to those data streams required. Further work on this will be carried out at WKIDEA.
Advance IEA methodologies and approaches in the ICES context	21. Conduct pilot studies in data rich areas for alternative IEA approaches, linking quantitative and qualitative methods at appropriate spatial and temporal scales.	1	2	We are using a range of different IEA approaches in different areas that help towards these objectives. In particular, Bayesian Belief networks (BBN)being explored in WGIAB and WGINOSE can make use of both quantitative and qualitative data. The ODEMM analyses used in WGEAWESS can now make use of both using e.g. mapped quantitative data, as well as expert judgment to evaluate critical areas.

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Develop approaches that allow forecasting within an IEA and evaluation of the effectiveness of tradeoffs of different management options	22. Determine and demonstrate what modelling and analytical approaches will allow projections of ecosystem states in IEA's	3	3	Forecasting of ecosystem conditions remains a challenge. The best approach to this would be the Integrated Trend Analyses (ITA) developed in WGIAB, WGINOSE, and WGEAWESS, and being developed in others. Food web and ecosystem models used in the Baltic, Norwegian and Barents Seas also allow some projection, as do GAM based analyses within WGEAWESS and Ecopath with Ecosim modeling used in other areas. Extensive modeling in WGIAB has been able to identify trade –offs. MSE approaches are being developed by WGNARS. WGIPEM are focused on model improvement and sensitivity testing
	23. Use IEA's to informing management about the effects of cumulative pressure and additive and non additive impacts, and which provide risk evaluations and analyses of tradeoffs between sectoral objectives.	1	2	ITAs, BBN, and ODEMM style analyses all make some approach to multiple pressures, and are used across the IEA Expert Groups. This can allow identification of where more than one sector and/or pressure impacts on a given ecosystem element. However, it cannot yet identify where, and how those interact beyond simply cataloguing their occurrence. Understanding cumulative pressures will likely be a long term goal for these groups, and will require major interaction with other science EG.
	24. Compare IEA and single issue approaches regarding their efficacy in providing management and governance advice on sectoral and multi sectoral use of the oceans.	2	3	Several groups e.g. WGIBAR, WGNARS, WGINOSE and WGEAWESS have deployed different IEA approaches within their areas. In some cases these have already been used for advice on management. Essentially, different approaches have different strengths and weaknesses. A major activity for WKIDEA will be to review SWOT analyses on IEA methods from the IEA EGs, and evaluate these in this context.

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SSGIEOM	Priority area	2014	2016	Comments
Identify and prioritize ICES monitoring and data collection needs	25. Identify monitoring requirements for science and advisory needsin collaboration with data product users, including a description of variable and data products, spatial and temporal resolution needs, and the desired quality of data and estimates	3	3	
	26. Develop a cost benefit framework to evaluate and optimize monitoring strategies in the context of the capabilities of, and reqests from ICES Member Countries and clients.	2	4	
Develop further the methodology for the observation and monitoring of marine ecosystems in the ICES area.	27. Identify knowledge and methodological monitoring gaps and develop strategies to fill these gaps	2	2	
	28. Promote new technologies and opportunities for observation and monitoring and assess their capabilities in the ICES context	4	4	
	29. Promote the development and testing of new fishing gear technology and methods for selective reduction of by-catch and discards and for mitigation of other environmental impacts of fishing	4	4	

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Implement integrated monitoring in the ICES area	30. Allocate and coordinate observation and monitoring requests to appropriate expert groups on fishery dependent surveys and sampling and monitor the quality and delivery of data products.	3	4	
	31. Ensure the development of best practice through establishment of guidelines and quality standards for (a) surveys and other sampling and data collection systems; (b) external peer reviews of data collection programmes and © training and capacity building opportunities for monitoring activities	3	3	

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Aquaculture

Background

The aquaculture industry is the fastest growing food production sector in the world and is an important component of world food security. A strong science and knowledge base is needed to inform management practices and guide the development of a sustainable aquaculture industry. To adequately address these challenges, ICES:

- Established a Working Group on Aquaculture and a Working Group on Social/Economic Dimensions in 2013,
- Identified aquaculture as a priority area in the ICES Strategic plan in 2014,
- Initiated an open aquaculture dialogue meeting with stakeholders in 2015 to discuss the future of sustainable aquaculture, and
- Agreed to develop aquaculture overviews similar to the fisheries overviews.

Next step

SCICOM had a strategic discussion at its meeting during the ICES ASC on 24 September, 2016 on the scientific content required and future products expected from ICES Action Area on Aquaculture. Based on the thorough and detailed discussions, there was a consensus agreement to reconsider the organisation of ICES aquaculture work. The following decisions were made by SCICOM:

1. To initiate an internal scoping process with the aim to develop a long-term strategy on Aquaculture, including the internal set-up of working group(s) to support this strategy.
2. As a consequence of this it was decided to close WGAQUA in its current form (as per 24 September 2016);

Towards a long-term ICES Strategy on Aquaculture

The SSGEPI Chair was asked to take the lead in outlining the process that would entail the following components:

- an internal scoping process, involving the ICES aquaculture community,
- an external scoping process, involving stakeholders and potential clients, expressing their wishes for ICES deliverables within aquaculture,
- develop a proposal for the organisational set up of ICES aquaculture work including scope and ToRs for expert groups.

A planning meeting will be held during November, 2016 outlining the required process.

Expected timeline

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The internal scoping process should be planned for the beginning of 2017. Dependent on the outcome, and the status of the ToRs, membership, and proposed groups, an external scoping process is expected in the latter part of 2017.

The process must ensure that aquaculture experts in the ICES Community willing to contribute will be made an integral part of the entire process.

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International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

CM 2016 Del-7.1.3

Agenda item 7.1.3

Arctic – involvement of new Contracting Parties to the ICES Convention /scientist from these countries

The ICES Strategic Plan 2014-2018 identifies the Arctic as a key strategic priority area. Given that the Arctic is of interest to circumpolar nations (and others) beyond the traditional ICES member countries, it has become relevant to consider how to improve collaboration with these governments in order to ensure ICES competence is made use of in the Arctic. For all countries it would be beneficial to be able to prioritise and coordinate scientific work in the Arctic, making best use of limited resources.

Council is invited to:

- *review the existing options for including/collaborating with distant water states on ICES work in the Arctic;*
- *give the General Secretary a mandate to contact relevant countries to determine if and how they would see the potential for closer collaboration on arctic issues.*

Overview of expert participation in ICES work

Scientific work

Currently the ICES scientific work is open to nationally nominated experts, with a possibility for the chair of the expert group to nominate experts from outside the ICES area or from international organizations. Governmental organizations, intergovernmental organization, non-governmental organizations, and individuals who have been granted observer status may attend meetings of SCICOM and SCICOM Expert Groups. According to the ICES policy, observer status can be granted in case of support for the ICES general objectives and competence in the ICES areas of work. The ICES policy specifically determines the right and obligation of the observers.

Advisory work

Observers are allowed to participate in the advisory process, except for the advisory Expert Groups.

A specific observer status has been granted to Greenland and the Faroe Islands, by MoU of 1998 between ICES and the Danish Government/Greenland/Faroe Islands, allowing a joint nomination of one scientist and one alternate, one of whom can participate, but not vote in the meetings of ACOM.

Expanding collaboration

There are currently three existing options for increasing cooperation with member countries or scientists from member countries, beyond the ICES member countries;

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1. In 2010, affiliate policy was updated and **affiliate institute** status was created, reflecting changes in the organization and improvements in transparency;
2. Article 16 (4) of the ICES Convention describes the process by which new members may **accede to the Convention**. The last country to accede to the Convention was Lithuania in 2006:
3. Cooperation with other **international organizations**, to widen the geographical and membership scope.

Affiliate Institutes

The ICES Affiliate policy states:

In order to meet the requirements of research institutions of countries outside the current geographical scope of ICES the Council may grant these institutions affiliate status in ICES.

1.2 The granting of affiliate status for a research organisation/institution shall be considered in the light of Article l (a) of the ICES Convention which indicates that the Council has the duty "to promote and encourage research and investigations for the study of the sea, particularly related to the living resources thereof." The organisations/institutions considered are national or international scientific institutes, funding agencies, ministries, etc. engaged in research activities which fall within the range of the ICES convention. These basic criteria shall be essential prerequisites for the status of affiliate status, they do not convey however, any right to claim that status.

Potential for New Members

Article 16 (4) of the ICES Convention states:

After the entry into force of this Convention in accordance with paragraph 3 of this Article, the Government of any State may apply to accede to this Convention by addressing a written application to the Government of Denmark. It shall be permitted to deposit an instrument of accession with the Government after the approval of the Governments of three quarters of the states which have already deposited their instruments of ratification, approval or accession, has been notified to the Government of Denmark. For any acceding Government this Convention shall enter into force on the date of deposit of its instrument of accession.

Opportunities and Challenges of accepting new members to ICES Convention

Opportunities	Challenges
Possibility to use ICES competence in geographical areas, where a broader group of countries is involved.	Ensuring ICES services remain relevant/possible in the context of increased membership – possibly a need to look into the delineation of advisory services in geographical areas, and to look into the participation of scientific experts in the various geographical areas.

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Potential for new/additional experts participating in the ICES network.	Adapting to different working styles.

Cooperation with other international organizations

ICES has developed cooperation agreements with a variety of international organizations[1]. These agreements and existing cooperation will be reviewed to consider where cooperation could be further developed to include Arctic aspects.

Justification

Governments and the regulatory commissions that they have established need an objective scientific foundation for international cooperative decision making. In order to achieve consensus at the international level, it is necessary that scientific cooperation occurs between nations, that the results of such collaboration is focused on key questions or issues of mutual relevance, and that the results of such co-operation are of practical use for management purposes. The International Council for the Exploration of the Sea (ICES) is the main intergovernmental forum for linking science and management in the North Atlantic and its adjacent seas.

Ocean management issues, based on the need to harmonise protection or conservation of the marine environment and its living resources with a legitimate desire to rationally harvest such resources (e.g. through fisheries or mariculture) and pursue other uses of the sea (e.g., shipping), are very complex. Bases for rational management schemes are dependent in part on (a) the development of understanding of the basic scientific issues from an interdisciplinary perspective, and (b) the attainment of consensus on the scientific facts or state of knowledge presented in an objective manner, which is in turn dependent on high quality quantitative data. Objective, high quality, and politically neutral science should serve as a key element of successful management and regulatory decisions. The ICES organisational model decoupling science from management and politics is an important ingredient for international consensus.

1 http://ices.dk/explore-us/how-we-work/Pages/Scientific-cooperation.aspx

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Council Meeting

October 2016

Agenda item 8.1

CM 2016 Del-8.1.1

ACOM Chair – 2016 Annual Progress Report

1 Summary

1. The advisory plan for 2016 involves advice on fishing opportunities for approximately 222 stocks, release of 6 ecosystem overviews, responses to 3 recurring requests for advice on ecosystem impacts of fishing activities and 24 special requests.

2. The process involves 24 advice drafting groups and the number of ACOM Web-Conferences planned to approve the advice was 21. 7 of the Web-Conferences were by mid-October canceled because no substantial comments on the draft advice were received and the advices were adopted without a Web-Conference.

3. ICES has officially presented the advice at 21 meetings.

4. In general data has been delivered within the deadlines in 2016 and no major failures has been observed with the exception of VMS data where a couple of countries still have difficulties in delivering.

5. Expert Groups have in general been addressing their ToRs of relevance for the advisory process with the exception of the fisheries overviews related ToRs.

6. The Secretariat has used substantial resources in implementing the review system. It has in recent years been increasingly difficult to find experts willing to act as reviewer and ICES may not be able to maintain the current review system unless the job as reviewer is made more attractive. Annually around 50 reviewers are involved in the reviews.

7. While ACOMs involvement in drafting and approving advice on fishing opportunities has been acceptable it has been very low for many of the non-fisheries advice.

   The low involvement of ACOM in non-fisheries advice give rise to concern and the issue was the main item on the agenda for the ACOM consultations at the Annual Science Conference.

   The ACOM Leadership had tabled a discussion document on possible restructuring of ACOM to ensure an appropriate committee support to all types of advice. ACOM recognised the problem and the skewed involvement in the advisory process. However, ACOM could not support changes to the current structure and wanted to continue with the present set up. To solve the problem it was agreed that ACOM will work harder at improving the composition of ACOM to better respond to non-fisheries advice. How this will be accomplished was left to the member countries.

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The approach taken by ACOM to ensure an active involvement by ACOM in all types of advice will require support at national level. It is crucial that ICES member countries actively support their ACOM member and ensure that there is a system in place that allows the ACOM member to nominate experts as appropriate to Advice Drafting Groups.

8. ACOM agreed at the December 2015 meeting on a workplan for 2016 with the following points:

   1) Frequency of assessments.
   2) The role of Expert Groups and the link with Benchmarks.
   3) Reopening of advice.
   4) Transparency of the advisory process.
   5) Technical guidelines.
   6) Introduction to advice.
   7) Framework for advice on ecosystem impacts of fisheries.
   8) Data – link between data collectors and data users.
   9) Fisheries overviews.
   10) Ecosystem overviews.

   Work is progression on all points with the exception of point 7 Framework for advice on ecosystem impacts of fisheries and point 9 Fisheries overviews.

   Priorities have been given to developing the fisheries and ecosystem overviews and further work on a consistent framework for ICES advice on ecosystem impacts of fisheries has been postponed.

   The finalisation of the fisheries overviews have been delayed. The Secretariat has, based on data and inputs from expert groups, prepare first drafts of fisheries overviews by ecoregion. However, there is still a number of outstanding issues to be addressed before the drafts are ready for review and approval by ACOM. ACOM has therefore postponed the release of the overviews to 2017 and instructed the ACOM leadership in cooperation with the Secretariat to develop a revised plan for finalising the overviews. The revised plan will include dedicated workshops to address outstanding issues.

2 Overview of the advisory process and advice provided in 2016

2.1 Recurring requests for advice

ICES has or will in 2016 provide advice on fishing opportunities for approximately 222 stocks. This is at the same level as in 2015.

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Area	Number of stocks for which advice has been or will be provided in 2016
Iceland and East Greenland	14
Barents Sea	7
Faroe Plateau	4
Celtic Sea and West of Scotland	56
North Sea, Eastern Channel, Skagerrak and Kattegat	36
Bay of Biscay and Atlantic Iberian Waters	32
Baltic Sea	19
Widely distributed and migratory stocks	24

Table 1. Number of recurring advice on fishing opportunities in 2016.

In addition to the recurring advice on fishing opportunities ICES has issued four Ecosystem Overviews and plans to release two more and has provided advice in response to recurring requests on ecosystem impacts of fisheries to:

EU Commission:

- Bycatch of small cetaceans and other marine animals;
- Impact of fisheries on other components of the ecosystem;

NEAFC:

- Vulnerable deep-water habitats in the NEAFC Regulatory Area

The advisory workplan for 2016 included the release of fisheries overviews for most ecoregions. However, the resources required to finalise the overviews have not been available and ACOM has decided to postpone the release of the overviews until the first half of 2017.

2.2 Special requests

ICES has by mid-October accepted 24 special requests that have or will be addressed in 2016:

Denmark

- Real-time monitoring for sandeel in Divisions 4.b and 4.c, SA 1 (Central and South North Sea, Dogger Bank).

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The European Commission:

- Potential management measures for salmon in the Gulf of Finland (ICES Subdivision 32);
- Data gaps in recreational fisheries of cod in the Baltic sea region;
- F_{MSY} ranges for selected stocks in ICES subareas 5 to 10 (EU fisheries in western waters); Framework for the classification of stock status relative to MSY proxies for selected category 3 and category 4 stocks in ICES subareas 5 to 10 (EU fisheries in western waters);
- Scientific monitoring fisheries for herring in ICES divisions 6.a and 7.b;
- Guidance on how pressure maps of fishing intensity contribute to an assessment of the state of seabed habitats;
- Guidance on the most appropriate method to aggregate species within species groups for the assessment of good environmental status for MSFD Descriptor 1;
- Guidance on the practical methodology for delivering an MSFD GES assessment on D3 for an MSFD region/sub-region;
- Guidance on operational methods for the evaluation of the MSFD Criterion D3C3;
- Evaluation of the Trans-border management plan for European eel in the Polish–Russian zone of the Pregola drainage basin and Vistula Lagoon;
- Stochastic medium-term projections for western Baltic cod stock;
- Request for ICES advice on an increase of the 2016 anchovy TAC.

France:

- Updated advice on the ecosystem effects of pulse trawl.

NASCO:

- Possible effects of salmonid aquaculture on wild Atlantic salmon populations, focusing on the effects of sea lice, genetic interactions, and the impact on wild salmon production.

NEAFC:

- Categorization of stocks requiring different character and level of NEAFC regulations;
- Evaluation of management strategy for blue whiting;

Norway:

- Review of the MAREANO project;
- Evaluation of management strategy for northern shrimp;
- Harp and hooded seals;
- Advice basis for deep-sea pelagic redfish in the Irminger Sea.

Norway and Russia:

- Evaluation of harvest control rules for Northeast Arctic cod and haddock and for Barents Sea capelin.

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OSPAR:

- Common indicator assessments of seals;
- Indicator assessment of coastal bottlenose dolphins;
- Further development of fishing intensity and pressure mapping.

2.3 Technical services

EU

- Additional catch options for the western Baltic cod stock.

HELCOM

- Review of a HELCOM tool to assess the impact of fisheries on seabed habitats.

Belgium

- Review of a procedure to give users authorisation to enter conservation zones with mobile fishing gear.

3 Review of advisory process in 2016

3.1 Data

In general data has been delivered within the deadlines in 2016 and no major failures has been observed with the exception of VMS data where a couple of countries still have difficulties in delivering.

3.2 Stock Assessment Expert Groups

The attendance of stock assessment Expert Groups seems in general to have been satisfactory and the groups have addressed most of their ToRs with the exception of the generic ToR b, on information to be used in the fisheries overviews.

3.3 Other Expert Groups

In general Expert Groups have been supportive to the advisory process and have provided the knowledge basis required to respond to the requests for advice. Some difficulties were experienced with the response to the NASCO request on effects of salmon farming where WGAQUA questioned the current advisory structure and did not provide comments to the report of the workshop set up to provide the basis for the advice drafting.

3.4 Reviews

The advisory process involves peer review of responses to special requests, benchmark results and substantial changes to methods and data used in an advice. It has in recent years becoming increasingly difficult to find experts willing to act as reviewer and ICES may not be able to maintain the current review system unless the job as reviewer is made more attractive. Annually around 50 reviewers are involved in the reviews.

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At WGWIDE 2015 an error was made in how the recruitment index was used in the mackerel assessment. The error had a significant impact on the advice for 2016 and ICES issued a correction of the 2016 advice by 30th September 2016, revising it upwards by 16%. The error was not discovered in the internal audit process in 2015 but first realized during the 2016 assessment meeting.

3.5 Advice Drafting Groups.

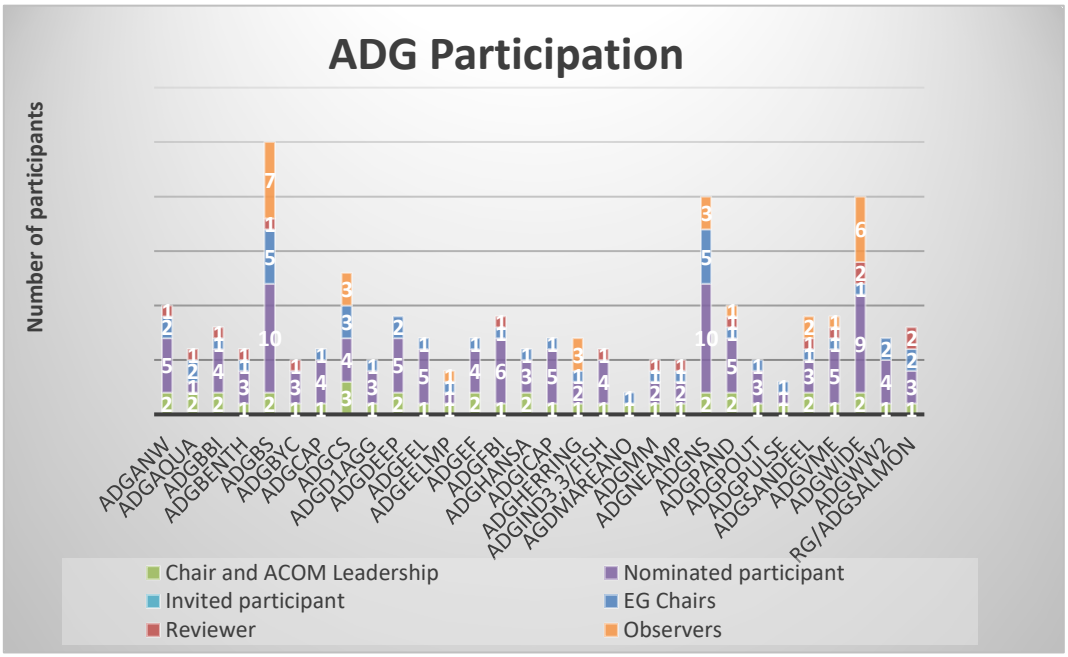

Figure 1. Until 20 October 2016 30 Advice Drafting Groups have met, 14 of which by correspondence.

The number of participants in the ADGs varies between 2 and 25. Attendance by participants nominated by ACOM national members/alternates varied from 0 to 10. The attendance by national nominated members was less than 3 in 6 of the 30 ADGs.

The participation has in general been satisfactory in ADGs dealing with advice on fishing opportunities but has been very low in a number of ADGs addressing non-fisheries requests (see section 3.7).

3.6 ACOM Advice Web-Conferences.

The participation in advice Web-Conferences in 2016 until mid-October is shown in Figure 2. A total of 27 Web-Conferences were planned for the period. 9 out of them were canceled because no substantial comments on the draft advice were received and the advices were adopted without a Web-Conference being held.

On average 46% of ICES Member Countries were represented at a Web-Conferences, 27% did not attend but approved the advice beforehand and 27% did not respond to the Web-Conferences invitation.

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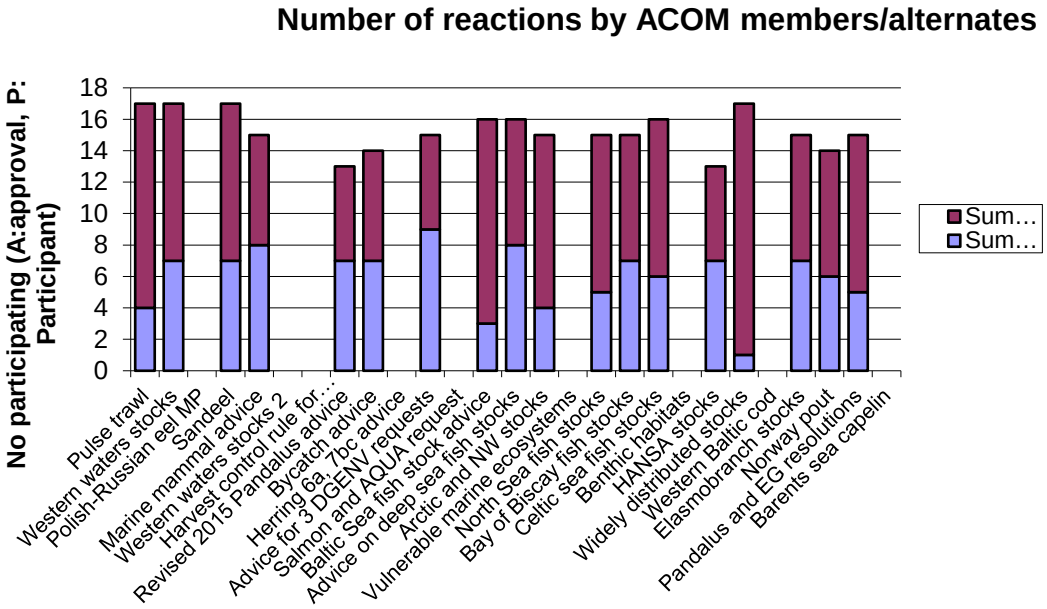

Figure 2 Number of ACOM members participating in advice Web-Conferences or approved the advice before the Web-Conference by mid-October 2016. In cases where no participation is reported the Web-Conference was canceled because no substantial comments to the advice were received

3.7 ACOM involvement in non-fisheries advice

The expertise within ACOM (ACOM members and alternates) coves, as shown in table 3 below, a wide range of topics. Despite this, the experiences are that it is very difficult to attract the relevant ACOM expertise to non-fisheries advice processes.

The advice process on the NASCO requests on impacts of salmon farming on wild salmon illustrate the tendency of low ACOM involvement in non-classic fisheries requests. The salmon advisory process involved a workshop, independent review of the report of the workshop, an advice drafting group and final approval by ACOM.

The workshop were attended by 25 experts from five ICES member countries and produced a very good basis for the advice.

The three reviewers provided a detailed and very useful review of the workshop report.

The Advice Drafting Groups was attended by the two workshop chairs, the chair of the review group, two members of the ACOM leadership, one member nominated by ACOM (attended by web) and the secretariat.

No ACOM members commented the draft advice and the advice approval Web-conference was cancelled.

The ACOM leadership considers the advice of being of high quality and it was very well received when presented at the NASCO annual meeting. However, the low involvement of ACOM give rise to concern. While the ownership of advice on fishing opportunities clearly is with ACOM, you could argue that the ownership

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of many of the non-fisheries advice are with the ACOM leadership and the Secretariat.

The issue of low ACOM involvement was discussed at the ACOM Consultations at the ASC in Riga (see this report chapter 7).

3.8 Presentation of advice

The MoUs with EU, NEAFC and NASCO ICES include commitments for ICES to present the advice at meetings organized by the commissions. In addition the leadership has been requested to give presentations at Costal State meetings, regional meetings and conferences. Table 2 provides an overview of presentations in 2016.

Organisation/meeting	Venue	Date	Presenter
EU Parliament. Advice on Fmsy ranges for Baltic stocks.	Brussels	11 February	Eskild Kirkegaard
Coastal States meeting. State of mackerel, blue whiting and Norwegian spring spawning herring	Copenhagen	8 April	Eskild Kirkegaard
LDAC. ICES advisory approach.	Brussels	19 April	Eskild Kirkegaard
EU – Norway. Advice on Pandalus in 3 and 4a	Copenhagen	3 May	Eskild Kirkegaard
BalticAC. Advice on Baltic stocks	Copenhagen	13-14 June	Carmen Fernandez
Azores Conference. ICES advisory approach.	Azores	5 June	Cristina Morgado
NASCO, Annual meeting Special session 8 June. Advice on impacts of salmon farming.	Bad Neuenahr-Ahrweiler Bad Neuenahr-Ahrweiler,	7 and 9 June 8 June	Jonathan White (Chair of WGNAS) Eskild Kirkegaard
DG MARE and Baltic EU Member States. Advice on Baltic cod stocks.	Brussels	11 July	Eskild Kirkegaard
PelAC. Advice on herring stocks. Advice on other pelagic stocks	Peterhead Den Haag	12 July 5 October	Ghislain Chouinard Carmen Fernandez
NSAC. Advice on North Sea stocks.	Aberdeen	14 July	Ghislain Chouinard

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NWWAC. Advice on North Western Waters stocks.	Edinburgh	5 July	Ghislain Chouinard
EU Council. Advice for 2017.	Brussels	14 July	Eskild Kirkegaard
DG MARE. State of stocks in EU Waters.	Brussels	15 July	Eskild Kirkegaard
BaltFish. Advice on Baltic stocks	Frankfurt	30 August	Eskild Kirkegaard
NEAFC, PECMAS. Advice to NEAFC. Annual Meeting, Advice to NEAFC	London London	4-5 Oct. 14 – 15 Nov.	Mark Tasker; David Miller Eskild Kirkegaard
Coastal State meeting on mackerel	Clonakilty	18 October	Carmen Fernandez
Coastal State meeting on blue whiting	London	24 October	Eskild Kirkegaard
Coastal State meeting on Norwegian spring spawning herring	London	26 October	Eskild Kirkegaard

Table 2. Presentations of advice by ICES in 2016.

4 Meeting between ICES and Recipients of ICES Advice (MIRIA)

The MIRIA meeting (12 -13 January) was attended by representatives from Denmark, EU-DGMARE, Faroe Islands, France, Iceland, NEAFC, Norway, OSPAR, ACOM Leadership and ICES Secretariat.

The recipients' feedback on the performance of the advisory system in 2015 was very positive and no critical problems were raised.

Main issues discussed:

- Changes to basis for advice. The importance of ICES advisory process being transparent was highlighted. It was pointed to that this includes a commitment for ICES to actively inform on changes made to the basis of assessments. The change in stock area for haddock in the North Sea and 6a was mentioned as examples.

- OSPAR informed that the change agreed at the bilateral meeting in 2015 to the format for requests for advice have been helpful for both formulating and discussing how requests will be implemented and also to follow up the processes.

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- It was mentioned that when ICES provide advice on management actions like minimization of bycatch of a certain species it would be useful if ICES could provide information on which are the fisheries where bycatch occurs and how the advice could be implemented.

- Dialogue on requests. To ensure that ICES makes optimal use of the scientific expertise available to the advisory process and that ICES' responses to the special requests are relevant and meet the expectations, ICES raised the issue of the need to improve the dialogue on requests especially in cases where more than one client is involved. NEAFC informed that this is already a discussion subject within NEAFC and will be discussed at NEAFC meetings in the autumn.

- Fisheries and ecosystem overviews. MIRIA welcomed the overview and expressed that they found them very useful. The traffic light system used in presenting the state of stocks/environment was questioned and ICES was requested to ensure that the message conveyed by the traffic light system is consistent with the assessed state.
  The importance of ensuring that the overviews are up to data was highlighted by MIRIA.

- MIRIA took notes of the new MSY approach for category 3 and 4 stocks and the process to ensure the reference points are estimated consistent with the definitions.

5 Meeting between ICES, Advisory Councils and other Observers (MIACO)

The annual meeting with observers MIACO took place 14 -15 January and was attended by 32 observers representing the Pelagic, Baltic Sea, North Sea, North Western Waters, South Western Waters and Long Distance ACs, the Dutch Pelagic Freezer-Trawler Association, Seas at Risk, DGMARE, Coalition Clean Baltic, Norwegian Fishermen's Association, Oceana, European Fisheries Control Agency, Danish Pelagic Producer Organisation, and MSC.

On request from the Advisory Councils a separate 2 hours meeting between ICES and the ACs were held prior the MIACO. The AC's would like to maintain this setup in future years.

Generally, the observers expressed a high degree of satisfaction with ICES and the advisory system. The ACs all expressed appreciation of ICES attending their meetings to present the advice.

ICES was criticized for the assessment and advice on blue whiting and for not being able to respond to a special request from the coastal States.

Main issues discussed:

- ICES MSY approach. Several ACs found it difficult to understand the approach and when and for what reasons reference points were changed. ICES was requested to make sure that the advice contains the rationale for possible changes to the assessments and the reference points.

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In relation to this ICES was requested to ensure that the assumptions used by ICES when assessing stocks and giving advice, be clearly explained together with information about uncertainties.

- Several ACs requested the possibilities to draw on ICES in developing proposal for management plans and in finding solutions to management problems. ICES informed that requests to ICES from ACs would have to come via the EU Commission.

- It was agreed that pre-meetings (Web-conferences) between Expert Groups and observers to ensure that relevant information from observers are taken into account in the work of expert groups could be organized on an ad hoc basis if requested by an AC and it should be warned by the AC to ICES as early as possible.

- Benchmarks. The ACs complained that it was not easy to get a clear overview of benchmark processes especially to pick up changes to meeting dates. A document explaining where and how to get the information was presented.
  It was discussed how observers best can contribute to benchmarks. ICES explained the importance of observers attending the entire benchmark process including the scoping and data evaluation workshops to ensure that relevant information from observers are taking into account.

- The issue of mismatch between fish stock management areas and ICES stock assessment areas was discussed. ICES informed that in accordance with the MoUs with clients ICES provide stock advice and not area advice. To provide advice by management area ICES would need policy guidelines on the relative allocation of by stock of the advised fishing opportunities to management areas.

- Fisheries and ecosystem overviews. While MIACO expressed a general support to the development of the overviews concerns were expressed that the production of the overviews present would divert effort from the core business of ICES in producing advice.

- Landing obligation. The implementation of the EU landing obligation was discussed with focus on possible effects of the quality of data and thereby advice. ICES policy of not making assumptions on the impact of the landing obligation but awaiting data to assess the impacts was accepted and supported.

6 Meeting of Expert Group Chairs (WGCHAIRS)

ACOM normally arrange two meetings for chairs of expert groups directly supporting the advisory process, an official WGCHAIRS meeting in January and a consultation meeting during the Annual Science Conference. This year the leaderships of ACOM and SCICOM decided to open the consultation meeting to all chairs of ICES groups.

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6.1 Chairs consultation at the ASC in Riga.

46 chairs attended the consultations.

The main aims of the meeting were to share experiences and discuss issues of relevance for the job as chair and to discuss the current support to chairs and possible needs for additional support.

The main conclusions were:

- Communication among groups and between groups and the SSG Chairs is lacking and needed;
- Overview of who is doing what is lacking;
- New chairs need training on the practical side of the ICES system;
- Attendance to especially SCICOM groups is low. Funding is a problem;
- Low attendance makes it difficult to address all ToRs;
- Support from the Secretariat was in general considered to be good. Expert Groups with advisory ToRs are usually getting more support than groups without advisory tasks;
- Good idea with a chairs meeting during the ASC open to all chairs.

6.2 WGCHAIRS meeting January 2016.

The WGCHAIRS meeting (25 – 27 January) was attended by 27 chairs.

The agenda contained a mixture of information to the chairs on developments in ICES advisory process and strategic discussions on i) advisory process with focus on the link between benchmarks, expert groups and review requirements, and on the support from the secretariat to the Expert Groups and ii) data with focus on data needs and data flow.

6.3 Advisory process

6.3.1 Benchmarks – Expert Groups – Review

WGCHAIRS agreed with ACOM that the current benchmark – Expert Groups system is not functioning optimal and that there is room for improvements and the ACOM – Benchmark Steering Group initiative was welcomed. It was underlined that it is important that there is a science incentive to attend Expert Group meetings.

6.3.2 Support from Secretariat

WGCHAIRS identified a number of tasks where more help from the Secretariat would be appreciated and could free resources in the assessment Expert Groups:

- Software developments and code sharing can be handled by staff at the ICES Secretariat. Programmers from the Secretariat needed.
- ICES Secretariat should help in writing and editing the advice.
- Take responsibility of the updated assessments of Categories 5 and 6.
- Communicating the advice.
- First day of the WG, it would help to have an overview of the history of the benchmarks for all stocks. The WG would be aware of when was the stock last looked at in detail.

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On the issue of having the Secretariat to do the update assessments the majority of the chairs feared that it could result in loss of ownership. Concerns were expressed that it could be difficult for experts to justify attendance of assessment meetings if they were not supposed to do an assessment of "their" stocks any more.

Several chairs mentioned that changes to procedures and formats created extra work and the feeling was often that Expert Groups were asked to apply new procedures and tools when these were still in a developing phase.

6.4 Data

There was general agreement that Expert Groups have a clear and important role in defining data needs but it is equally unclear who to pass on the data needs to. There is missing a feedback mechanisms from Expert Groups to data collectors.

The feedback process should include a prioritisation process to ensure that the need and nice to have issue is addressed. Currently prioritisation of data collection is taken at national or institutional level with very limited coordination between countries and no clear user consultancy mechanisms.

It was mentioned that to define the data needs ICES should have a clear strategy for what to do with category 3 to 6 stocks.

7 ACOM consultations at the ASC in Riga

The main items on the agenda for the ACOM consultation were the advisory workplan for 2017 and ACOMs involvement in non-fisheries advice.

ACOM adopted on 7th October the advisory workplan for 2017 including resolutions on expert group meetings and benchmark processes.

The ACOM Leadership considers the low involvement of ACOM in non-fisheries advice as a serious threat to the agreed strategy to expand ICES advisory services on non-fisheries issues and had requested ACOM to discuss the issue.

The ACOM Leadership had tabled a discussion document on possible restructuring of ACOM to ensure an appropriate committee support to all types of advice. ACOM recognised the problem and the skewed involvement in the advisory process. However, ACOM could not support changes to the current structure and wanted to continue with the present set up. To solve the problem it was agreed that ACOM will work harder at improving the composition of ACOM (including members, alternates and nominees) to better respond to non-fisheries advice. How this will be accomplished was left to the member countries.

The approach taken by ACOM to ensure an active involvement by ACOM in all types of advice will require support at national level. It is crucial that ICES member countries actively support their ACOM member and ensure that there is a system in place that allows the ACOM member to nominate experts as appropriate to Advice Drafting Groups.

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8 ICES-EFARO initiative on surveys

At the joint EFARO – ICES meeting on 21st January 2016 on developing joint data collection plans using vessel surveys plans for three pilot studies (North Sea, Celtic Sea and Bay of Biscay) were agreed. I was furthermore agreed to seek EU funding.

On July 4, ICES and EFARO had a meeting at DG-MARE on possible EU funding. DG-MARE expressed interest in the matter and the proposed three pilot studies. However, DG MARE could not promise funding or other support to the initiative.

Following the meeting with DG MARE it was agreed to seek other means of funding the pilots.

9 ACOM Workplan 2016 – short progress report

9.1 Frequency of assessments.

The process to identify candidate stocks for less frequent assessment agreed at the December 2015 ACOM meeting is running as planned. ACOM will, at the November 2016 meeting, be requested to review the list of candidate stocks and select those to be discussed with clients.

9.2 Reopening of advice.

It was at the December 2015 ACOM meeting agreed to ask the WGNSSK to evaluate the added value of the reopening process. The group will report on this in conjunction with the reopening process in the autumn 2016. The report will be on the agenda for the November 2016 ACOM meeting with the aim of deciding if the report can form basis for a discussion with clients on the need for the reopening process.

9.3 The role of Expert Groups and the link with Benchmarks.

ACOM and the Benchmark Steering Group established in December 2015 a joint Group to develop a proposal for e new benchmark system (ACOM - Benchmark Steering Group). The report of the joint group was presented at an Open Session at the ASC.

The Open Session was quite critical with the suggested framework. Main criticism was on the complexity of the proposed process.

The input from the open session was discussed in a meeting of the ACOM-BSG subgroup and it was agreed to move forward on testing the use of an open scoping process to define key issues to be addressed in the advisory work within an ecoregion. The plan is to arrange a scoping workshop back to back with WGNSSK in 2017.

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9.4 Transparency of the advisory process.

Is linked to the previous point (Expert Group – Benchmark). The joint ACOM - BSG Group addressed in their work the involvement of stakeholders in the advisory process.

9.5 Technical guidelines.

In December 2014 the contents of the guidelines were identified. The Secretariat and the ACOM leadership have been working on the guidelines and finalised chapters will be released in 2016.

9.6 Introduction to ICES advice.

ACOM agreed at the December 2015 meeting that the draft revised introduction although not ideal should be published. It was furthermore agreed to simplify the introduction and include links to the technical document.

The draft introduction has been published. The ACOM leadership will work on a simplified version to be published in 2017.

9.7 Framework for ecosystem impacts of fisheries.

Priorities have been given to developing the fisheries and ecosystem overviews and further work on a consistent framework for ICES advice on ecosystem impacts of fisheries has been postponed.

9.8 Data – link between data collectors and data users.

The issue was discussed at WGCHAIRS (se section 6.4 above). The key issue discussed was the lack of a mechanisms/process that allows the expert groups as data users to feedback to the data collectors with information on their needs. This was discussed again at the February 2016 Bureau meeting. The ACOM leadership, Data Centre, SSGIEOM and the Secretariat is working close together to establish a process to prioritise data needs and provide feedback to data collectors.

9.9 Fisheries overview/advice.

The Secretariat has, based on data and inputs from expert groups, prepare first drafts of fisheries overviews by ecoregion. However, there is still a number of outstanding issues to be addressed before the drafts are ready for review and approval by ACOM. ACOM has therefore postponed the release of the overviews to 2017 and instructed the ACOM leadership in cooperation with the Secretariat to develop a revised plan for finalising the overviews. The revised plan will include dedicated workshops to address outstanding issues.

9.10 Ecosystem overviews.

In addition to the four fisheries overviews issued early this year the plan is to release in 2016 overviews for two further ecoregions: Iceland Sea and Norwegian Sea.

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Table 3. Area of expertise of ACOM members and alternates as reported to ICES.

Topic	ACOM Members and Alternates	
	Number	% (total = 114)
Ecosystems processes	18	16%
Management Strategies Evaluations	9	8%
Fish stock assessment	40	35%
Fisheries interactions	4	4%
Species interactions	14	12%
Marine mammals	3	3%
By-catch, PETs	11	10%
MSFD, D1	7	6%
MSFD, D3	15	13%
MSFD, D6	4	4%
Maritime spatial planning	9	8%
Stock Identity	9	8%
Fish diseases	1	1%
Impact of aquaculture in the ecosystem	6	5%
Data collection	20	18%
Recreational fisheries	6	5%
Environment impact	9	8%
Contaminants	9	8%

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Progress on the pilot project on update assessments.

Outline of project: Transparent Assessment Framework

To implement a system that will give stock assessors the tools to archive data, methods and results used in an ICES assessment, so that they can be replicated at a future date and also be re-run the following year with minimal changes

Summary

- A tool to improve the organization and consistency of Expert Group workflow;
- Online archive of final assessment each year, for all stock categories;
- Maintain the ownership of the assessment process within the EGs;
- All data, tools and scripts available via ICES data services;
- Input and output linked to existing or upcoming ICES data services.

Benefits (after initial setup costs)

- High **quality** science: data and methods are online, peer-reviewed process, reproducible research, and fully documented;
- Improved **time efficiency** and **reduced workload** on EGs:
    - Automatic generation of standard input and output tables and graphs;
    - Quick to re-run assessment and generate tables and graphs if input data is modified;
    - Update assessments should require few if any changes to benchmarked agreed scripts.
- Much more **open and structured** than current workflow;
- Protect against loss of "institutional memory";
- Improved access to stock assessment data and results, for the wider scientific community.

Timeline

The plan is to focus on development in 2016-2018 and deployment in 2018-2020. To enable rapid development, the system will contain relatively few stocks during the first two years, followed by large-scale deployment of as many stocks as possible. By starting with one stock from each EG, a connection will be made to all EGs from an early point.

2016

The project plan was presented and discussed at an internal workshop attended by the Data and Advice teams of the secretariat where valuable feedback was received. TAF was also presented at the ICES ASC to the joint ACOM/SCICOM meeting and at an open session "How is your science being used in assessment and advice". Feedback from the ICES community was positive and encouraging and the critical comments received are guiding ongoing developments.

2017

January Project presentation and feedback at WGCHAIRS meeting

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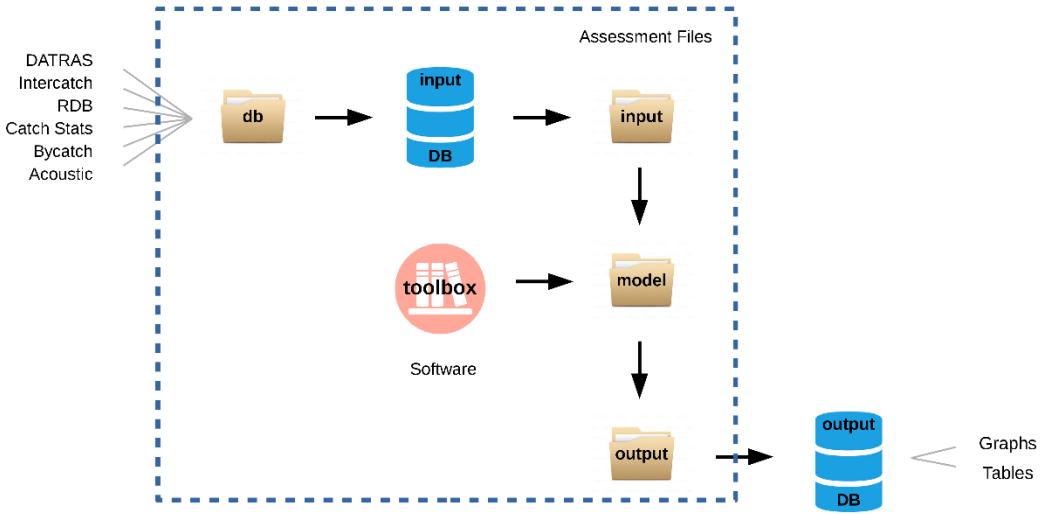
April	First launch of system, with limited features Archives of input and output made available online Around 10 stocks (one from each EG) entered into system
2018	
January	Status update and feedback at WGCHAIRS meeting
April	Operational system, with automated scripts Continued work with same 10 stocks, adding one year of data Users can upload and modify files, run assessment online, browse archives

Two years into the project, the framework (system, workflow, adoption) will be reviewed and the steps for the next two years planned. These steps will include a training and collaboration phase with EGs, entering more stocks into the system, and developing further improvements and automation.

2019	More stocks entered into system Further improvements of system and automation
2020	More stocks entered into system Continued work with EGs to establish new workflow

System workflow



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ICES CIEM
International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

Agenda item 9

CM 2016 Del-9.1

Proposal for an update to the ICES Data Policy

This document contains the proposed new Data Policy.

The current (2012) Data Policy was evaluated by DIG 2016 and updated, in summary these were:

- Exceptions on data permissions
- Incorporating the eight principles on Data Citation (paragraph 7)

As external developments (eg. EU INSPIRE Directive, adoption of CC by institutes) might influence the way institutes or MS deal with data, it is important to re-investigate the ICES Data Policy if necessary, even before the official update is scheduled.

Council is invited to approve this update to the Data Policy.

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1 Scope

ICES will be a leader in marine data and information management, providing best practices, data mobilisation and services for its advisory and science groups and the wider marine and maritime communities

This policy states the conditions for data submission, access and use in order to facilitate the production of science based advice and status reports, and serve the scientific community.

This policy applies to data managed by ICES, and to ICES activities for providing access to data managed elsewhere.

Regarding public access to these data; this policy may not apply to underlying data where the data provider has exerted their right to restrict public access. All data products are by default publicly available, including those derived from restricted data. The 'Annex' available on this link denotes the specific dataset collections where this applies.

2 Definitions

Data Products: data outputs resulting from aggregation of or calculated from underlying data

Underlying data: data delivered by the Data provider

Data user: entity (eg. person, organization, group, including ICES expert groups) using data

Data provider: entity providing data to ICES

Data source: ICES, or ICES and data provider(s)

Publicly available: online open access

Meta-data: descriptive information about detail or aggregate data sets, necessary to interpret, use and disclose data

3 Use of Data

a. Data users can obtain publicly available data as soon as is feasible
b. Correct and appropriate data interpretation is solely the responsibility of data user
c. Results, conclusions, and/or recommendations derived from the data do not imply endorsement from ICES
d. Data sources must be acknowledged, preferably using a formal citation
e. Data users must respect any restrictions on the use of data
f. Data users are requested to inform ICES of any suspected problems in the data
g. Data users are encouraged to inform ICES of possible sources of relevant information

4 Contribution of Data

a. All data provided to ICES are considered to be publicly available unless otherwise explicitly specified and agreed

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b. The data provider must be authorized to provide the data
c. Data contributions should be made as soon as possible after the data collection event
d. All data including meta-data, supplemental information and quality indicators should be provided using standard codes, formats, and protocols to the extent possible. Further guidance can be found on the ICES website http://www.ices.dk/datacentre/Submissions/
e. The quality assurance of data is the responsibility of the data provider
f. Data providers are requested to inform ICES of any national policies that may place special conditions on the redistribution of data

5 Redistribution of data

a. Data may only be redistributed, i.e., made available in other data collections or data portals, with the prior written consent of ICES
b. Redistribution of meta-data is always allowed

6 Data Quality

a. ICES develops and applies quality assurance procedures as appropriate and feasible, and in cooperation with data providers, ICES Expert groups and other organizations
b. ICES may be informed of potentially erroneous data. ICES will ensure that data providers are informed of quality issues
c. The ICES Data Centre will never change the original data record from a data provider, but may undertake conversions or transformations of that data to allow its inclusion in ICES databases
d. Although the ICES Data Centre may perform some data quality control, the data provider always retains complete responsibility for data quality
e. Data users are responsible for proper use of the data, including regard to data quality

7 Data Citation

Data citations should facilitate giving scholarly credit and normative and legal attribution to all contributors to the data, recognizing that a single style or mechanism of attribution may not be applicable to all data.

a. ICES stores Persistent IDs (PIDs) when supplied with a dataset – at what level the DOIs are created at will then not be in ICES' control. The provision of PIDs should be best practice not a requirement. ICES is able to mint DOIs to datasets created within ICES.
b. A data citation should include a persistent method for identification that is machine actionable, globally unique, and widely used by a community. Where DOIs exist these should be used but otherwise the existing citation guidelines should be used. ICES provides specific examples of citing using the DOIs should be given - specifically how different levels in the hierarchy should be cited.
c. PIDs are available even for datasets with restricted access

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Supplemental information to the ICES data policy

Motivation Objective and Framework for the Data Policy

This policy sets the framework for ICES' work involving data collected, evaluated and/or used. It gives rules needed as a prerequisite to make ICES data and ICES work attractive to a wider public and to clarify rules and procedures with regard to data used by ICES expert groups. It will therefore improve the capacity of the ICES to provide quality advice in an ecosystem context.

Elements on how to implement the policy within ICES can be found in the ICES Data Strategy and the ICES Data Centre Business plan.

Data used might be stored in centralised or distributed systems. In a centralised database all data are physically located at, and served from, a single location. A distributed database is where data can be located at various geographically distributed nodes (but still be accessible through one central node or hub). The ICES data policy applies to data managed by ICES and to ICES activities for providing access to data managed elsewhere. A full overview of databases (centralised and distributed) available at ICES can be found at http://www.ices.dk/datacentre/Submissions/index.aspx

By maximizing the availability of data to the community at-large, ICES promotes the use of these data, thereby ensuring that their maximum value can be realized and thus contribute to an increased understanding of the marine environment.

The ICES data policy is consistent with, and in the spirit of, national and international policies and laws. The policies and laws may apply to the ICES Secretariat, member states, and/or to the people or organizations that either provide or use data and information managed by ICES. Applicable policies or laws are those related to UN conventions, policies of international bodies often within the UN, policies and laws of the European Union as well as of ICES member states. A review of data policies relevant to ICES' work is given in annex 4 of the Report of the ICES Study Group on Management of Integrated Data (ICES CM2005/ACE:03, Appendix 1).

Data security and storage

a. ICES makes every effort to ensure that data received are handled and stored in a way that preserves the integrity of the data as it was provided to them
b. ICES maintains an accession system that ensures that all data can be identified in the system, and any resubmissions of data are recorded as such
c. All data, meta-data and supporting information are stored as original files and also as part of the database systems backups

Use of Data

The ICES website is a key focal point in disseminating information to the ICES community and beyond. Data might be quality controlled (see below): regardless of whether the data is quality controlled or not, ICES and the data provider do not accept any liability for the correctness and/or appropriate

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interpretation of the data. Interpretation should follow scientific rules and is always the user's responsibility.

Users must acknowledge data sources, as it is not ethical to publish data without proper attribution or co-authorship. Any person making substantial use of data must communicate with the data provider prior to publication, and should possibly consider the data provider(s) for co-authorship of published results.

All data held by ICES should eventually become publicly available, with due regard to relevant legislation. However, access to sensitive data may be restricted or data may be aggregated for a limited period of time if specifically stipulated by the data source (see below). Also, the use or reproduction of data for commercial purposes might require prior written permission from ICES and/or the data source.

Users are requested to inform ICES of any problems encountered with ICES-provided data. A timely and easy-to-use feedback procedure will be available, aimed at correcting data at the data source. This feedback will increase the quality of the data and therefore cover one aspect of added value through open access to data.

To become the focal point for marine data in the North Atlantic, ICES will continuously expand its data repositories as well as links to external data. Users are therefore encouraged to contribute information on data sources currently not available through ICES, but possibly important for ICES' work.

Citation of Data

Data Sources should be acknowledged by a citation. The citation must include as a minimum a reference to the ICES database where the data extraction was made and the year in which the database was referenced. Preferably, data is cited by using the dataset's PID. When no PID is available, one can cite the dataset using one of options below can be used as examples:

Examples of citation are given below:

standard citations

"ICES Historical plankton dataset 2011. ICES, Copenhagen"

"ICES EcoSystemData data portal, 2012. ICES, Copenhagen"

Extended citations

"ICES Database of Trawl Surveys (DATRAS), Extraction 3 JUNE 2012 of International Bottom Trawl Survey (IBTS). ICES, Copenhagen"

"ICES Environmental database (DOME), Extractions 3-10 JUNE 2012; Chemical data for the OSPAR CEMP, Reporting laboratory(s) via British Oceanographic Data Centre (UK). ICES, Copenhagen"

A Data Citation may also include a URL to the database, and/or a URL to the meta-data record for the ICES dataset in the ICES Spatial facility (http://geo.ices.dk). Additional citation information is made available in the

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Disclaimer file that accompanies the data download under the section 'Data Acknowledgment'.

Data citation should follow community best practices, please refer to the 8 principles of data citation available here[1]

Contribution of Data

Data providers may be the originators of the data/information, for example, persons responsible for the scientific work that produce the data/information; or an intermediary such as the data providers' associated institute(s), the agency that commissioned or funded the work, or even the information technology group responsible for preparing the data for submission to ICES. The data provider must precisely specify any access restrictions that it wishes ICES to uphold. Some cases that call for restrictions include data which is protected by law and data submitted during a prescribed period of exclusive use (which is normally not more than two years for data from scientific origin - the time needed for initial collation and quality control). Restricted access will be considered on a case-by-case basis. ICES urges data providers to re-enforce their commitment to free-of-charge and unrestricted use of their data.

Data and information are provided to ICES from many data sources. They are of variable quality and can be obtained using a variety of methodologies. Three types of data are distinguished:

1. Detail data are individual measurements or observations. In order to interpret detail data, expertise as well as related attribute data such as type of date, location, time and unit of measurement are also required
2. Aggregate data are summarized detail data
3. Meta-data are data about data. That is, they provide information about detail or aggregate data sets. Examples of meta-data include accuracy, precision or method of measurement, and location, structure or ownership of the data.

In order to maximize the usability of data and thereby their value, data providers must supply meta-data and, if available, data quality indicators. All data including meta-data and quality indicators should be submitted using standard coding formats and protocols to the extent possible.

Speed is a primary factor determining the usefulness of data, thus data should be made accessible as soon as possible and to the broadest user group possible. This implies both technical and policy considerations and coordination on the part of data sources, users, and ICES. For example, it will be possible for data sources to submit multiple versions of the same data set during the process of quality control.

End-to-end data management (data life cycle) is encouraged (see Annex 3 of ICES CM 2005/ACE:03; BCO-DMO Data Management Best Practices Guide, www.bco-dmo.org/resources).

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1 Data Citation Synthesis Group: Joint Declaration of Data Citation Principles. Martone M. (ed.) San Diego CA: FORCE11; 2014

https://doi.org/10.17895/ices.pub.22303573

Some -often older- data may be unintentionally destroyed or lost. ICES strives to rescue and archive valuable data relevant to the ICES mission that are at risk, including those residing in reports and documents. The data provider, however, is responsible for the providing sufficient documentation with the data.

Data Quality

To indicate the quality controls that have been applied to a specific data set, ICES' systems will accommodate quality flags. The system will allow re-submission of data throughout the quality control process, and thus also allow for accelerated submission of data. For example, preliminary data can be submitted immediately after collection and replaced later by cleaned data.

Finally, the reporting of suspected errors in the data will be facilitated, and that information relayed to the respective data source so corrections can be made.

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International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting
October 2016
CM 2016 Del-9.2
Agenda item 9

Regional Data Base

Summary

Recognising that Council has endorsed the further development of the Regional Database for Commercial catch sampling (RDB) both in 2014 (680 000 DKK from equity) and 2015 (300 000 DKK from equity). The future of the RDB now stands at a cross-roads. By redesigning the RDB now to anticipate and answer the needs of the ICES assessment groups, ICES will be in a strong position to:

- Reduce the workload for the countries in estimating and providing data (one data call for detail data that would also serve the raised data for stock assessments)
- Ensure quality assured standardised statistical methods (expert driven) are used for estimating the data for the stock assessment
- Provide a commercial catch data processing platform for all ICES countries (to avoid an EU and non-EU system for ICES stock assessments)
- Describe and document data quality by using common quality checks across all countries' data

Described in this paper is a plan of how this could be achieved. The effort amounts to 4.5 person years – 2.5 of these person years can be sourced from the existing pool of resources within the Secretariat and focussing almost entirely on this development. A further 2 person years of a technical resource would be needed to achieve the timeframe of achieving this development in 2 years. This would mean an investment of 1 million DKK from equity to support this activity.

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1 Achievements

The RDB has been hosted and maintained by ICES under agreement with the European Commission (MoU) since 2012, in addition ICES have provided funds for the further development of this system. Based on this funding model the following has been achieved:

Maintenance:

- Operational system, actively used and maintained
- Regional standardization of codes and quality control of input data
- Helpdesk for data providers and users
- Delivery of regional data for the three Regional Coordination Meetings (RCM's) committed to its use
- Agreed data provision (data call) and data access (data policy)
- Main work platform of the three RCM's with all respective countries uploading data to the RDB

Development:

- Further standardisation of codes and quality control of input data, improvements of uploads, and report outputs
- Support for the new landing categories (i.e., landings above and below the minimum conservation size) resulting from the EU landings obligation

2 The main challenge for the RDB

In order to use the fisheries dependent data collected by member countries to provide a documented, quality assured and accurate description of the fisheries and their catches to be used in scientific advice on management of fisheries, there is a strong recommendation from ICES expert groups (PGDATA, WGCATCH, WKRDB), the EMFF funded fishPi project, and the wider ICES end user community to make it possible to raise the collected data to fisheries levels using statistically sound methods. To accomplish this the RDB must be further developed to ensure that:

- The input format support design based sampling and probability information (data need for statistical raising);
- The raising method support statistical raising.

In Figure 1 the current process for raising data is demonstrated. The first vertical arrow from the left hand side shows that data are exported from the RDB for use by the RCM's. The dotted blue line indicates that the system cannot raise/estimate biological data using statistically sound methods for the international stock assessment. This creates a system that falls short of its aim to allow multiple uses of the data, and where countries deliver data twice; Detailed data to the RDB for the RCMs and raised/estimated data to InterCatch for the stock assessment, and where the end user (ICES) is not able to make full use of the RDB as a tool to evaluate the quality of the data since there is no documentation of the national raising/estimation methods.

https://doi.org/10.17895/ices.pub.22303573

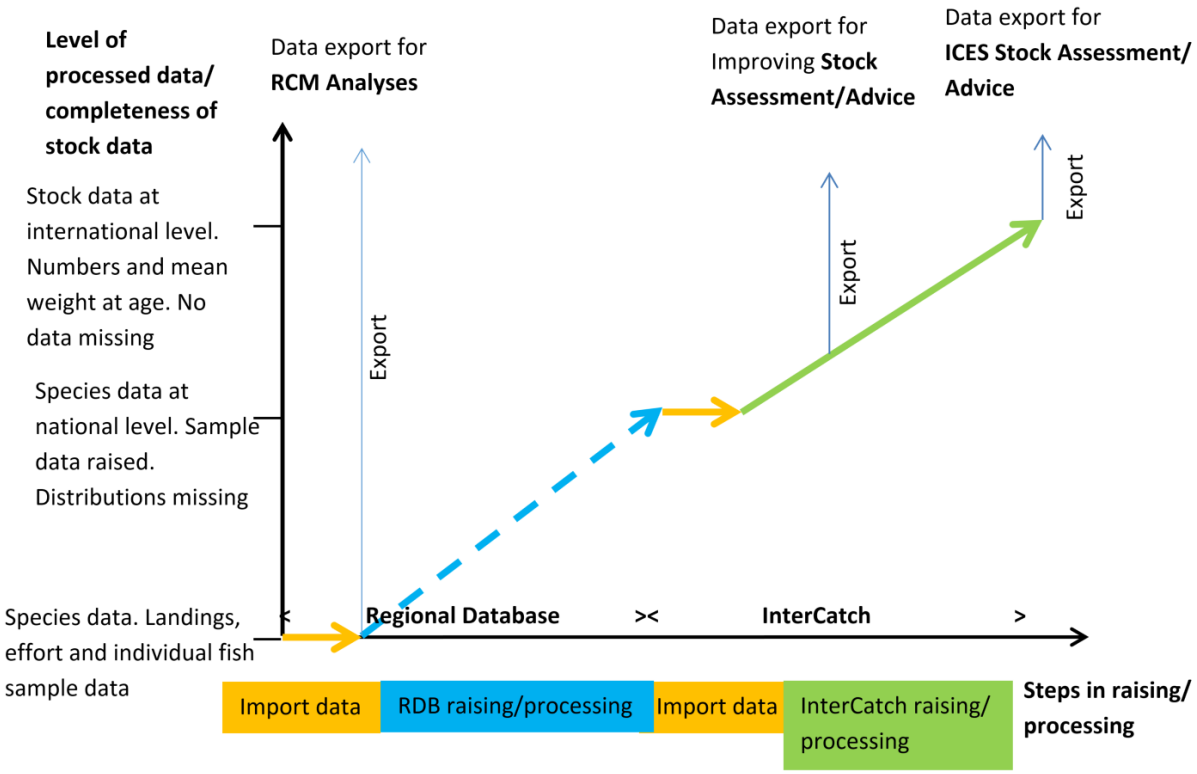

Figure 1 The current process for Stock Assessment

3 The shared vision for the RDB

- Reduce the workload for the countries in estimating and providing data, as the RDB would contain (or can utilise from *R* libraries) all needed methods
- Ensure quality assured standardised statistical methods (expert driven) are used for estimating the data for the stock assessment
- Provide a commercial catch data processing platform for all ICES countries (to avoid an EU and non-EU system for ICES stock assessments)
- Describe and document data quality by using common quality checks across all countries' data
- Reduce the workload for the countries submitting data, as the data raised in the RDB by a button click automatically will be made available to InterCatch for the ICES stock assessments
- Support the Regional Coordination Groups/Meetings with data and reports for their work
- Data are encapsulated within the RDB (the data is safeguarded in the RDB and the end user understands every change to the data)
- Leverage the body of work already existing in *R* code projects and developed further by the experts
- Links to other databases e.g. the VMS/Logbook database used by WGSFD, ByCatch regulation, Fisheries independent data (i.e. DATRAS)

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The vision is illustrated in Figure 2. Not only would the RDB support the planning and reporting work of RCGs/RCM's, but it would be able to directly support the data needs for scientific advice on fisheries management including stock assessments and provide outputs at all levels in the process in a quality assured manner.

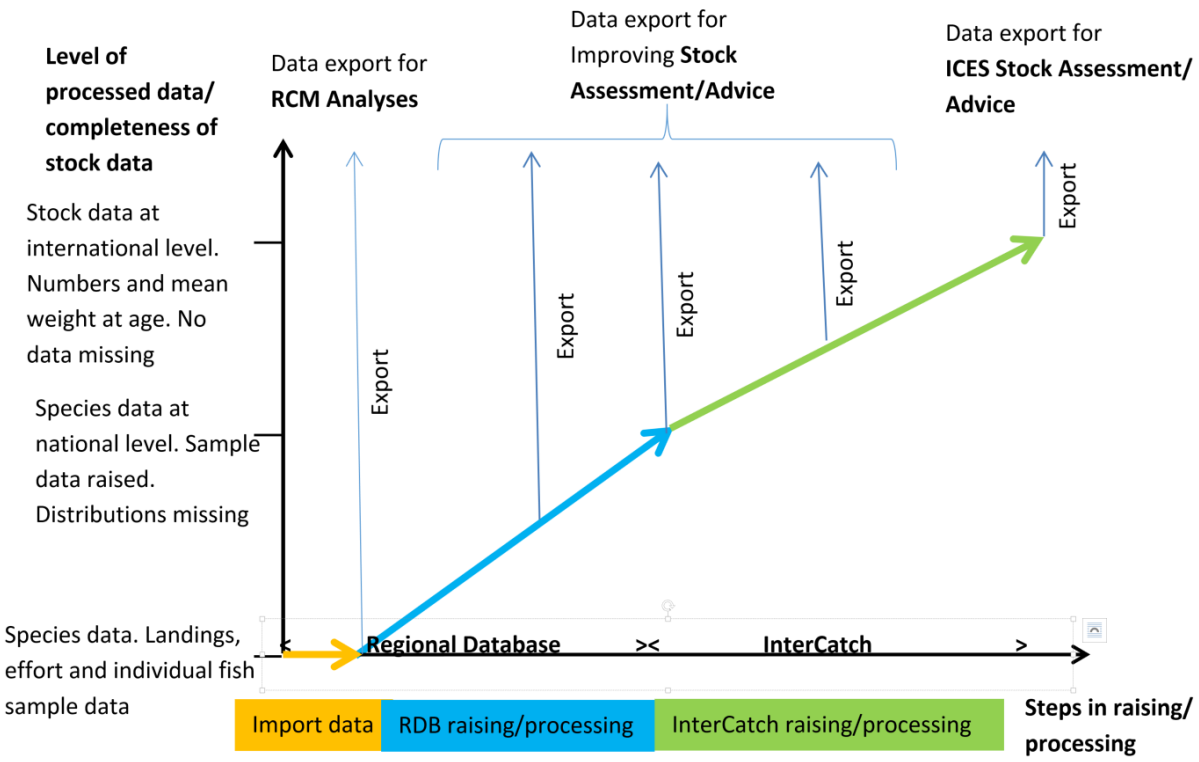

Figure 2 The vision for Stock Assessment

4 How to get to a statistically sound RDB

PGDATA, WGCATCH, WKRDB and the fishPi project recommend to update the data exchange input format with the necessary information that would enable statistically sound raising. The extra information concerns the sampling design and probabilities on all levels of the sampled imported data.

The raising should be based on statistical sound methods instead of the existing methods combining age-length-keys, etc. These statistical methods are documented and available already in *R*[1], so currently the existing RDB is implementing the raising methods 'behind the scenes', the new approach should be to call on the existing statistical methods available in *R*. This would make the raising more transparent, and easier for the experts to update the methods, if needed. It is important that the data providers and expert groups take an active part and are involved in a transparent process to ensure the RDB fulfils the needs for uploading their design based sampling information and raising data using statistical methods. Therefore, workshops involving all relevant groups should be considered to scope the further development of the RDB. Figure 3 below gives an overview of the flow of information and the interaction with the national experts to the two main end users, but data could also be extracted for other relevant end users e.g. STECF.

1 https://www.r-project.org/

https://doi.org/10.17895/ices.pub.22303573

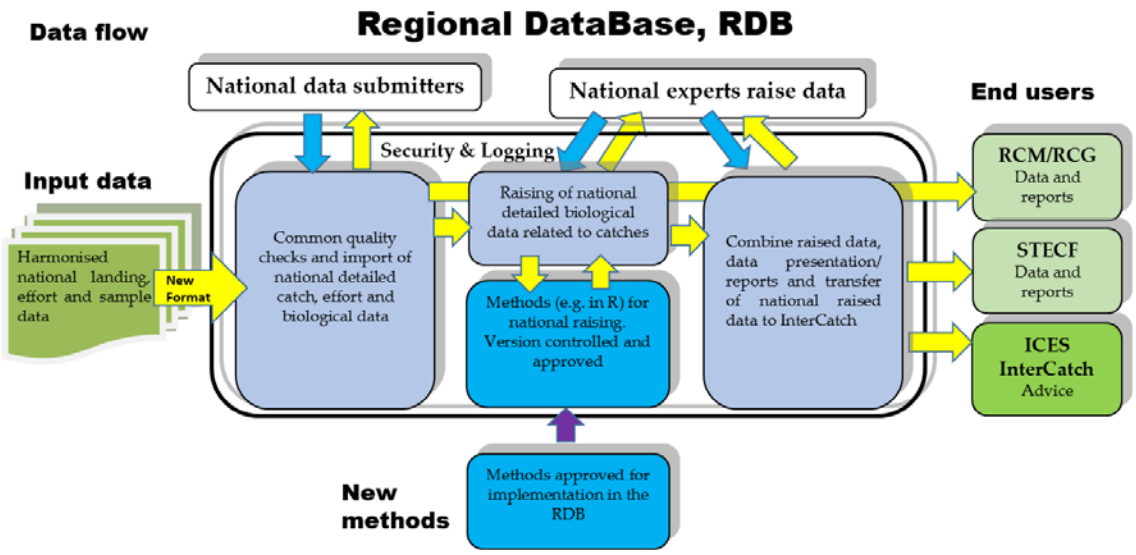

Figure 3 Architecture of the proposed RDB

5

This vision could be realised in 2 years. The project is estimated to require 4.5 person years in total effort.

Effort (person months)	Tasks completed	Workshops
16 PMs	RDB system specification, 1st phase design and development modules	1st Workshop
15 PMs	Database design and development 2nd phase, upload and checks, version control of approved methods in R-script	2nd Workshop
13 PMs	Raising methods process, overview and deletion of uploaded data, download of data including RCG reports	3rd Workshop
11 PMs	Approval of raised national data and transfer to InterCatch, stock splitting	

Figure 4 person months and tasks

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Financial aspects

The maintenance of the RDB is currently covered by the MoU with EU. The need for funds to cover the developments was discussed at the last Liaison Meeting. The Liaison Meeting is a meeting organized by the European Commission with the chairs of the various Regional Coordination Meetings and the main DCF data end users (ICES, JRC, and GFCM). All members endorsed the developments of the RDB and considered it the main tool for a regional coordination data collection programme. In relation to the financial aspects for the development, several possibilities were discussed and ICES was clear that including the developments in the MoU with the current budget ceiling is not an option.

From Commission (via the MoU with ICES)	Investment in Euros
ICES receives annually for hosting and maintenance	74 000 (annually)
From ICES Council	
Approved initial development in 2014	91 000
Approved further development in 2015	40 000
Development funding will be exhausted by March 2017	

Figure 5. Funding model for RDB

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6 Linking to the Transparent Assessment Framework

Both ICES and the GFCM are working on assessment framework systems – the ICES version is under development and will start to be tested on a number of stocks in 2017. The goal of the transparent assessment framework is to have a fully encapsulated system – from the input data, to the stock assessment models, to the eventual stock assessment result outputs. Therefore, the proposed RDB development is a major building block in ensuring that there is a seamless link between the input data and the assessment modelling (See Figure 6).

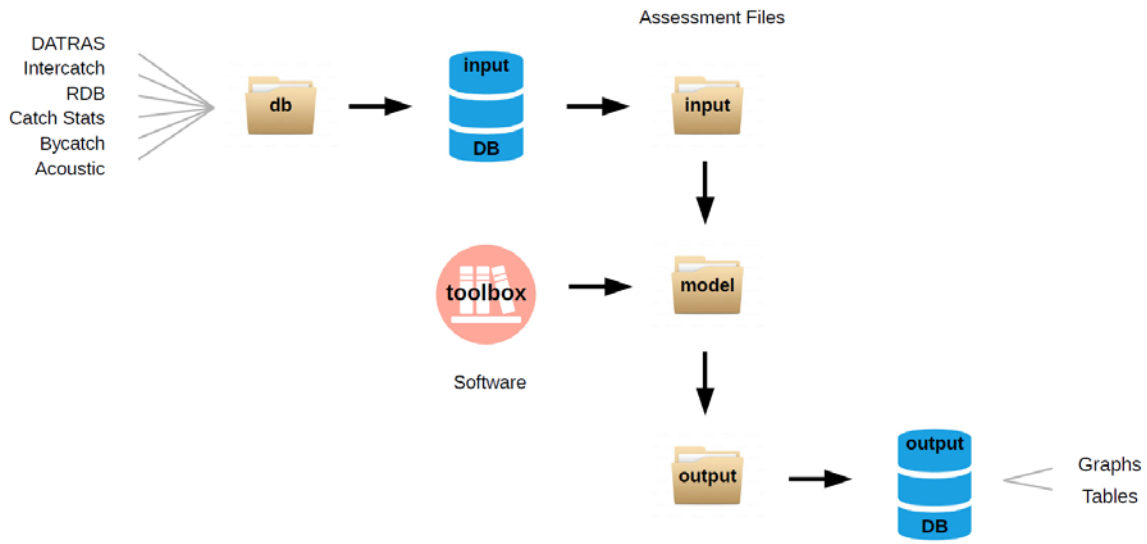

Figure 6. The Transparent Assessment Framework

7 Other considerations

7.1 The technical architecture of the RDB website

The current RDB web interface is built on outdated software architecture, in moving to a statistically sound RDB it would be logical to redevelop the interface at the same time using up to date technology, which will offer more functionality. It will be possible to reuse some of the existing code and logic, which will make the development faster, but it will be a good investment to spend the time developing the RDB using the latest software framework.

7.2 Consequences of not developing the RDB

If the RDB is not developed to support statistical raising, then the countries will have to use other tools to raise their data according to statistically sound principles. This could result in an uncoordinated and undocumented approach within each region. The data, which are used for the stock assessment and subsequent catch advice, will not have been prepared or checked to the same uniform standard across countries. It will not be possible to fully document how the raising has been done, or which methods and data have been used. This would result in poorly documented data quality, which will affect the resulting assessment and advice.

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8 Development tasks of the statistical RDB

The following is a more detailed description of the tasks for developing the RDB, so it fulfils all the requests of the RDB and support the countries in statistical raising of the data.

RDB system specification

Overall system specification of what functionalities the RDB should have. Coordination of approval and dialogues with a group of experts, who can approve/help with the specification of the functionalities and later perform the testing of the developed functionalities.

Specification	Interact with ICES RDB statistical expert group
	Identify the latest version of the updated exchange format
	Identify the outputs from raising methods in R
	Specification document on upper level of the overall RDB

Database design and development

Specification	Write detailed specification according to the latest exchange format and user security in the first round, the other modules will follow.
Development	Develop and implement the database design for the uploaded data and the user security in the first round, the other modules will follow.
	User id and creation date and time added to all import tables
Test	All of the above including unit and integration test

User security

The user security will be based on country, region, and a few needed roles

Specification	Write detailed specification of the user security and maintenance
	Write detailed specification of the menu structure
Development	Develop and implement: • Setup the RDB in the TFS • User security maintenance • Login • The user security on pages

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Test	All of the above including unit and integration test

Note: Maybe a role for updating the methods, but I think it should be in the hands of ICES, since we have the responsibility for making sure the R-script is working.

Code maintenance from ICES internal code system RECO

Specification	Write detailed specification of the code maintenance from RECO to lookup tables in the RDB
Development	Develop and implement the code maintenance from RECO to lookup tables in the RDB. Use procedures from the acoustic db.
Test	All of the above including unit and integration test

Upload and checks

The checks are the existing using XSD and with extra field dependency range checks (e.g. WECA) written in C# in the RDB. Maintain a list of checks, which are implemented in C#, so the users know which checks are performed.

Specification	Write detailed specification of the upload and checks Write detailed specification of the menu structure
Development	Develop and implement the data upload from the file to the database, data will not be deleted, data will be added and the latest version will be used for further raising Develop and implement the checking of the data: XSD, convert XQuery checks to C# Develop and implement an overview of checks implemented in C#
Test	All of the above including unit and integration test

Issues to look into:

- Should the overwrite rules include institute? This will open up for the possibility of having duplication of data, which should be avoided.

Note: Based as much as possible on web services so we in the future easily can let countries upload data automatically using a web service. Design the upload so it accommodate for adding extra information without huge changes to the RDB. The

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upload have to be optimised and using the fastest technics. The existing code is not optimal and it can takes more than an hour to upload a file.

Checks in R for data upload

Interface with version controlled checks programmed in R.

Specification	Write detailed specification of the version control and interface to checks written in R
Development	Develop and implement a direct import of the uploaded data into temporary import tables for R checking Develop and implement of the version control and interface to checks written in R, so the checks are stored, can be viewed and executed
Test	All of the above including unit and integration test

Issues:

- Ensured that the checks written in are harmonised way or are using a template and can just be plugged in
- In case of errors how detailed are each check in feedback of the error to the user

Overview and deletion of uploaded data

Overview for countries and RCG

Specification	Write detailed specification of the filter and overview of the uploaded data with a functionality to delete the selected data. The deleted data will be flagged as deleted Write detailed specification of the RCG specific page with an overview of aggregated uploads
Development	Develop and implement the filter and overview of the uploaded data with an option to delete/set a bit in the deleted field of the selected data Develop and implement the RCG specific page with an overview of aggregated uploads
Test	All of the above including unit and integration test

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Download of data

Country and RCG

Specification	Write detailed specification of the filter for the data which should be downloaded
Development	Develop and implement of the filter for the data which should be downloaded and the download functionality
Test	All of the above including unit and integration test

Note: Should be based on a service, so countries in the future can download data using a service.

Version control of approved methods in R-script

Create a version of the new method and wrap it in to a stored procedure. Link to the method to the previous version of the same method or create it as a new method. Testing of the method inside the RDB would be needed. A person from an ICES statistical methods group (E.g. WGCATCH), who is authorised to approve methods should acceptance test and approve the method. The script will be save both in a SP and also in TFS. The method written in R would be in the ICES GitHub and from there the script would be evaluated, tested, outputs compared, and when approved it should be send to ICES. The final approved version would then be included in the RDB.

Specification	Write detailed specification of the version control of raising methods written in R
Development	Develop and implement the version control of raising methods written in R
Test	All of the above including unit and integration test

Raising process

A snapshot of uploaded data used for raising is taken, which makes it possible to reproduce the raising in exactly the same way, independent of later uploaded updates of data. It will also be possible to use other methods on exactly the same data and compare the output.

Specification	Write detailed specification of the execution of the version controlled methods in R, the snapshot of the sample data used for the raising, a page for settings for the raising

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	method, the output data from the raising methods and logging of everything. have to be specified
Development	Develop and implement the execution of the version controlled methods in R, the snapshot of the sample data used for the raising, a page for settings for the raising method, the output data from the raising methods and logging of everything
Test	All of the above including unit and integration test

Note: Differences in sample data can limit the statistical methods used, this should be incorporated in the selection of available methods.

Stock splitting

Specification	Write detailed specification of the stock splitting functionality
Development	Develop and implement of the stock splitting functionality
Test	All of the above including unit and integration test

Approval of raised national data and transfer to InterCatch

Specification	Write detailed specification of the approval of raised national data and transfer to InterCatch
Development	Develop and implement of the approval of raised national data and transfer to InterCatch
Test	All of the above including unit and integration test

RCG reports

Specification	Write detailed specification of the existing reports, selection and execution of a report
Development	Develop and implement the existing reports and the selection and execution of a report

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Test	All of the above including unit and integration test

Project management

Specification	Guidance, decisions, coordination internal and external, meetings, status.

Reports from R scripts

Specification	Write detailed specification of the version control of approved reports from R scripts and the execution of the reports
Development	Develop and implement of the version control of approved reports from R scripts and the execution of the reports
Test	All of the above including unit and integration test

Workshops

There should be three workshops during the development of the RDB, the aim is both to get all countries involved, but also to focus on the latest improvement of the exchange format and raising methods.

1st workshop

The first workshop should focus on the latest exchange format for statistical raising, at one point it has to be determined that the format can fulfil the needs, and that format will then be frozen until a significant change has to be included. The workshop should also work through the RDB system specification, which include the overall functionality of the RDB. If functionality is missing or not clear the workshop can specify needs. Finally the workshop should approve the specifications.

2nd workshop

The second workshop should focus on checks, the version control of methods in the RDB and the use of the methods for raising.

3rd workshop

The second workshop should focus on the development of the RDB at the stage it is, and identify issues, which need to be dealt and suggest solutions, with special focus on the data raising process. Standard reports should also be specified.

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9 The project timeline

The project could be achieved in 2 years. The project is estimated to require 4.5 person years in total effort.

Effort (person months)	Tasks completed	Workshops
16 PMs	RDB system Specification Database design and development 1st part User security Code maintenance from RECO Checks in R for data upload	1st Workshop
15 PMs	Database design and development 2nd part Upload and checks Version control of approved methods in R-script Project management	2nd Workshop
13 PMs	Raising process Overview and deletion of uploaded data Download of data RCG reports	3rd Workshop
11 PMs	Approval of raised national data and transfer to InterCatch Stock splitting Reports from R scripts	

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10 Architecture

Development methodology

Web application: MS Visual Studio 2015 using ASP.NET Core web application with the .NET framework

Database: MS SQL Server 2016 with R services

Project steering methodology

Agile project management

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Data and Information

1 Data report

1.1 Financial decision (for Council)

The Regional Database for Commercial catch sampling (RDB) is a key tool for ICES in its strategy of providing quality assured and documented data into the stock assessment process. Council has already recognised this by providing development funds (in 2014, 680 000 DKK from equity and 2015, 300 000 DKK from equity).

The future of the RDB now stands at a cross-roads. By redesigning the RDB now to anticipate and answer the needs of the ICES assessment groups, ICES will be in a strong position to provide a commercial catch data processing platform for all ICES countries (to avoid an EU and non-EU system for ICES stock assessments), and to reduce the workload for member countries in processing and transmitting data to ICES.

http://community.ices.dk/Committees/Council/2016/Meeting_Documents/CM_2016_Del-9.2_RDB.pdf

Council is invited to approve the development of this system with an investment of 1 000 000 DKK from equity to provide 2 person years of resource for this platform.

1.2 Policy decision (for Council)

As part of its ongoing work, the Data and Information Group (DIG) at its 2016 meeting reviewed the current (2012) ICES Data Policy[1] and recommends the following amendments to ensure the continued relevance of the policy to the ICES member countries both supplying and consuming data to/from ICES.

In summary these are:

- Exceptions on data permissions (to cater for data that are subject to other policies but made available to ICES i.e. EU Data Collection Framework, 3rd party datasets)
- Updated section on (digital) Data Citation, which follows the community best practice

http://community.ices.dk/Committees/Council/2016/Meeting_Documents/CM_2016_Del-9.1_Data_policy_update.pdf

1 http://ices.dk/marine-data/guidelines-and-policy/Pages/ICES-data-policy.aspx

https://doi.org/10.17895/ices.pub.22303573

Council is invited to read and approve this update to the ICES Data Policy.

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2 Data and Information Operational Group (DIG)

2.1 New chair of DIG

Jens Rasmussen (UK) will take over as the new DIG chair, and in agreement with SCICOM his term starts at the 2017 DIG meeting in May.

2.2 Change of DIG workflow on longer term

It was felt that the reporting structure and deliverables for DIG could potentially change quite dramatically instead reporting and profiling the ICES data community by topics areas that are more relevant to data and information management.

2.2.1 Basic model for future DIG work

The model preferred was to align the broad governance issues into topic areas corresponding to the functional areas of the Data Management Association's Body of Knowledge (DAMA-DMBOK) - although it would benefit from slight modifications to align the ICES terminology in some places. The overarching areas of data governance that DIG could evaluate would be:

Topic Area	**What is included**
Architecture and governance	Understanding integration and linkage between underlying data, data products and associated working groups in ICES
Data Development	Updates to structures and formats of data either as requirements arising from new use cases or legal requirements
Database Operations	Understanding the ICES responsibilities in terms of maintaining databases versus data coming from outside or other data providers.
Data Security	Ensure that you can enable appropriate access to data and prevent inappropriate access. This also touches on potential limitations on data use and/or further dissemination.
Reference and Master Data Management	Identify the authoritative copies of the master data and understand where shared references codes are used and who maintains and develops these.
Warehousing and Business Intelligence	How data are made available for sharing and integration through presentation within the ICEs working community, more broadly on websites, and how different types of users need to interact with the data.

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Document and content management	How documents, guidelines and other unstructured[1] content relevant to the data are maintained.
Metadata management	How well data structures and information is profiles via metadata. This links to both legal compliance obligations (e.g. INSPIRE) and improvements in data sharing and citation (e.g. minting DOI for reports, datasets etc.).
Data Quality Management	Consideration of how data quality is managed for the given collection. Responsibilities may be shared between expert groups and data centre, and the key thing is to understand how decisions on quality management are made, and how they align across ICES data handling.

If this methodology is adopted, the format of the DIG annual report would change to essentially become the framework evaluation instead, structured around data governance principles.

2.2.2 DIG workflow example

One option would be for DIG to review all ICES data products with this governance framework, and essentially develop a reporting framework that enables feedback to all associated working groups and committees. The reporting tool would serve to identify strengths and weaknesses for ICES data handling and thus could help inform any risk management as well by identifying weak areas that might pose a risk to successful delivery of advice for a number of working groups.

Clearly this type of exercise would be a substantial undertaking, and would essentially become the primary recurring action for DIG, with other terms of references being placed within the framework context.

The cycle would provide regular updates and maintain overview of the data management principles for the ICES "estate" of data. This approach would help SCICOM and ACOM in getting an overview of the data related interactions, and would allow DIG to more proactively engage with the wider user community rather than waiting for single issue terms of references to find their way to DIG.

1 Unstructured in this context simply means that the content is not part of a relational database – it can still be well organised.

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3 Data Centre: Three major new data portals released

Underpinning the ICES strategic plan implementation gut feeling report are a number of very concrete outputs in particular on regional operational products.

- Deepwater Ecology group (WGDEC) in cooperation with the Data Centre released the Vulnerable Marine Ecosystem portal.
  http://vme.ices.dk

- the Impulsive Noise register in support of both OSPAR and HELCOM.
  http://underwaternoise.ices.dk

- Biodiversity portal which houses seabirds and seals data primarily for OSPAR but also for the joint WG on birds (JWBIRD) and the marine mammal group (WGMME).
  http://biodiversity.ices.dk

https://doi.org/10.17895/ices.pub.22303573

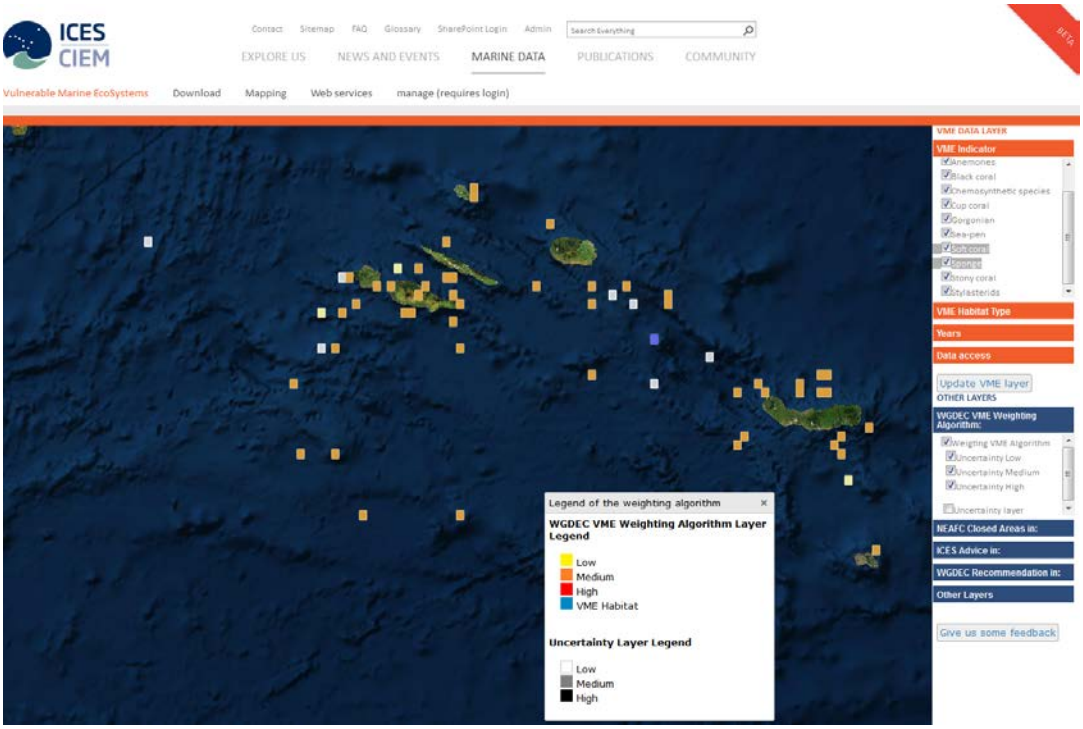

Figure 1 the Vulnerable Marine Ecosystem (VME) data portal - http://vme.ices.dk

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Secretariat report

Council is invited to take note of the information in the Secretariat report, relating to:

- visits to Member Countries, connected with voting on national contributions;

- recruitments, and re-appointments in Secretariat, for ACOM, and SCICOM chairs, as well as ICES Editor-in-Chief of the ICES Journal of Marine Science (IJMS)

- exploration of cooperation agreements within strategic areas

- procedural and administrative issues relating to how to carry out the organizations work

- progress on working tools for use by the community

- communication and outreach

- coordination of implementation through the coordination group.

1 Visits to Member Countries

Contact and visits to Member Countries, took place from January to June, prior to the e-voting regarding 2017 national contributions. Although the e-voting resulted in a decision for stable contributions in 2017, the visits provided a good opportunity to discuss the scope of ICES activities, and listen to specific requests from Member Countries. Also with national authorities that are not normally directly involved in ICES work.

It was not possible to arrange for visits to all Member Countries prior to the voting, and some meetings are planned for 2017.

2 Reappointment of the current Editor-in-Chief of the IJMS

Bureau decided, based on a recommendation from a review panel, to re-appoint the current Editor-in-Chief, Howard I. Browman of the ICES Journal of Marine Science (IJMS) for another 5 years (2017–2021).

Bureau also requested the Secretariat, in cooperation with SCICOM, elaborate new Guidelines for appointment and re-appointment of the Editor-in-Chief of the IJMS, and the Series Editors of the ICES in-house publications (CRR, TIMES, and Disease Leaflets).

3 Recruitments – Secretariat

A number of recruitments have taken place during 2016:

- maternity term replacements;

- four positions in the Secretariat;

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In addition, the Secretariat has extensively offered possibilities for internships, and taken advantage of opportunities to provide time-limited work for persons with wages subsidized by the municipally. This is a mutually-beneficial arrangement, with mostly positive outcomes for all.

As part of the re-organization of the Secretariat Science Department, following the Council decision on Strengthening of the SCICOM leadership, and based on requested background information submitted to Bureau on 25 April 2016, the General Secretary appointed Wojciech Wawrzynski as Head of Science Support, starting 1 October 2016.

4 Cooperation Agreements with Member Countries and Partners

Bureau has agreed that the Secretariat will explore a number of cooperation agreements, to make progress on areas of ICES Strategic Plan. This includes:

1) a potential Letter of Agreement with EEA, to ensure:

- ICES work on integrated ecosystem assessments in regional seas, are used as scientific contributions to implementation of the ecosystem-based approach, including a temporal-spatial approach;

- ICES strength as a scientific knowledge provider, data and information producer, and advice delivery are recognized, with its different nature and cost components;

- ICES strength in the reach of its trans-Atlantic and global scientific network is recognized;

2) a potential cooperation agreement with the Arctic Council, to ensure

- coordination of identification and acquisition of knowledge inputs.

Both agreements have been discussed with representatives of EEA, and the Arctic Council, respectively – through the Secretariats.

Cooperation with PICES on sub-Arctic issues will continue on specific thematic issues (i.e., the upcoming ESSAS Symposium on "Moving in, out and across the Subarctic and Arctic - shifting boundaries of water, ice, flora, fauna, people and institutions", jointly with PICES, IMBER, NPRB, NOAA Alaska Fisheries Science Center, NSF, Research Council of Norway, Norwegian Fishing Companies, Japanese funding agencies, and others.)

3) An MoU between ICES and Norway on delivery of scientific advice, including costs for recurrent advice and costing components for special requests, including advice on aquaculture.

The MoU was elaborated with representatives from Norway, and entered into force on 1 July 2016.

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5 How to conduct ICES work – procedural and administrative issues

1. Communication during meetings and ASC:

- to ensure a consistent approach to external communication (i.e. use of social media) during meetings, from both members and observers, Bureau agreed to the importance of the Chair bringing this issue up at the beginning of a meeting. The text below will be incorporated to the guidelines for Chairs.

At the beginning of each meeting, the Chairs should agree with meeting participants the expectations of what may or may not be communicated externally during the meeting (i.e. via email and/or social media). Any communication with the press should always be coordinated through the ICES Secretariat communications department (communications@ices.dk). ICES encourages openness and transparency in the scientific process, however, in some cases confidentiality must be respected and results protected until formally published on ICES website.

- expectations around communication at the ASC must also be explicit (e.g. for tweets/pictures from presentations). For this reason the *Guidelines for ASC Conveners* will include recommendations stating that unless specifically stated otherwise by the presenter, a presentation will be considered public.

2. National nominations of industry observers

- Bureau discussed the current process for nominating industry experts. While industry scientists have so far been perceived as adding value, balance is needed, as to date there have been no scientists nominated from other sectors (e.g. NGOs). Nominating other scientists may help balance the perception. The implementation of the Code of Conduct and Conflict of interest policy should help to protect ICES reputation. At the same time there is an immediate need for awareness building amongst the Chairs.

3. Conflict of Interest and Code of Conduct

- for the second time in two consecutive years a Conflict of Interest arose in the Publications and Communications Group (PUBCOM), due to the chair becoming a Editor-in-Chief of a competing Journal.. The Chair resigned, members of PUBCOM, with E-i-C positions were asked to leave the meeting while IJMS issues were discussed. This prompted the need to review the PUBCOM ToR, with the aim to find a long-term solution.

6 Communications

Digital communications is the main focus for ICES communications activities: all news articles, press releases, event announcements, etc., are published on the ICES website and shared via social media. The website has a steady stream of users with 65% being returning and 35% new visitors. ICES is steadily gaining followers on all three social media channels with Twitter proving to be the fastest growing platform: as of September, ICES had over 6000 members in our LinkedIn group, over 4000 followers on Twitter, and over 3000 ”likes” on Facebook.

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Developing links with Communications departments in ICES member countries

The ICES Communications department is building links with science communicators in member countries. At the ASC this year a Marine Science Communicators Networking Meeting was organized. This platform provides an important link between the ICES Communications department and communicators in member institutes, facilitating communication about ICES work in Member Countries.

An Open Session on Science Communications also took place during this year's ASC.

Website development

The website has been updated to responsive design. This means that the website view adjusts automatically based on the device the user is using, be it PC, tablet, or a smartphone.

The "groups" section is also getting an update, so that information that is entered in the Resources Coordination Tool (RCT) will be automatically updated on the website.

ASC and Early Career Scientists

Several Early Career Scientist events took place during the ASC, including a mentor programme, a career chat, and a skills workshop.

Examples of communication and outreach products

The communications department is sharing information mainly via news articles focussing on ICES strategic areas, as well as reporting from ongoing and upcoming events and meetings. Both May symposia (zooplankton and MSEAS) were promoted by a series of articles posted throughout the week of the events.

The bi-monthly e-newsletter includes in-depth feature articles, written in co-operation with scientists in our network.

The 2015 Annual Report is available online: http://ices.dk/news-and-events/news-archive/news/Pages/A-year-in-review-ICES-Annual-Report-2015.aspx

By September, seven press releases had been sent out to the mailing list including press from different ICES member countries.

Seven Editor's Choice articles from ICES Journal of Marine Science have been profiled on the website so far this year.

Data decks, a series of cards describing ICES data portals, were published in the spring.

Development of a set of images which can be used in ICES communications, e.g. PP-presentations, outreach materials, infographics.

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7 Resource Coordination Tool and Content Administration for Reports and Advice (CARA)

7.1 RCT

ToRs & Resolutions

A great deal of coordination and development progress has been made with regards to the inclusion of ToR and Resolution in the RCT system. Both Science and Advice have now agreed upon a useful format for the "front-end" reports of the ToR and Resolution information, so now only some final programming is required. The work is planned for completion by the end of 2016.

My Profile

The next major development planned for the RCT system is the inclusion of "My Profile" personal sites. This will allow individual ICES experts to contribute additional information about their personal skills and expertise to the ICES resources database, taking pressure for this information off of the national institutions. Work on the My Profile pages has begun, an initial testing phase is planned to take place before the end of 2016.

Delegate Nominations

The originally planned method of nomination for the RCT has proven to be too complicated for both the programming and user ends, so a new approach is being developed. This new approach will allow delegates access directly into the RCT which will also mean access to a variety of reports at any time. The focus will be to keep processes as simple as possible for ICES delegates. A pilot for this approach is in development.

7.2 CARA – Content Administration for Reports and Advice

Progress is being made on the development of CARA, a virtual environment that threads the needle of integration across all pillars in the ICES Strategic Plan: Advice, Data, Science and the Secretariat. CARA facilitates interoperability, transparency, reproducibility, and data provenance.

Interoperability – CARA links to ICES and non-ICES databases, datasets, and sources to provide outputs in the form of products, services, and tools for the ICES community

Transparency – CARA unlocks data and information published by ICES from PDFs and into downloadable, searchable, and transferable products

Reproducibility – CARA facilitates ICES results to be published with data and software code so that others can verify the findings and build on them.

Data provenance – CARA documents data lineage and record of transformations from survey to assessment to advice

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CARA is built using a modular approach to provide functional, value-added products for the ICES community on a rolling basis while improving integration and extensibility throughout the ICES system.

8 Coordination Group

Following the Council decisions on the strengthening of the ACOM and SCIOM leaderships, Bureau established a Coordination Group, consisting of the Chairs of ACOM, and SCICOM, the Heads of Science and Advisory Support, the Head of Data and Information, the General Secretary, the Ecosystem Coordinator, and the Coordinating Secretary.

The group has meet on a monthly/bi-monthly basis with the aim to ensure coordinated implementation of the strategic decisions taken by Bureau, ACOM, and SCICOM.

Among the issues discussed;

- handling of data in the current set-up; the link between survey and assessment groups, and the use of the Regional Database (RDB) in raising data used for assessments;
- work within strategic areas (integrated ecosystem understanding, aquaculture, arctic);
- requests for participation in projects;
- development of the code of conduct/CoI policy;
- midway review of the ICES Strategic Plan.

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Annex: Additional information on CARA- Modules implemented 2016

Stock List Database and management interface
http://sld.ices.dk/StockList.aspx

Database of all active stocks by year, metadata and attributes used in the ICES catch advice and stock assessment expert groups. A web-based tool, the SLD facilitates central management of data using controlled vocabularies.

Products and services implemented

- Stocks by assessment year
- Validity of current advice
- Stocks by ICES areas and ecoregions
- Stocks by species
- Stocks by ICES data category
- Stocks by EG, ADG

Work in progress

- Surveys – coherent use of survey acronyms/labelling throughout ICES. Links ICES Science Expert Groups, SSG's, survey indices generated by DATRAS, and ICES catch advice.
- Stock annexes – increase accessibility
- Stock codes and names -- link historic stock codes and names for traceability between historic records among ICES databases (e.g. SLD, InterCatch, RECO, SAG, Publications Library)
- Dataset of catch advice type and value by year to provide "most recent advice" product for all ICES catch advice.

Stock Assessment Graphs Database http://standardgraphs.ices.dk

Database of fish stock assessment output that is used as the basis of ICES advice on an annual basis.

Products and services implemented

- Stock assessment outputs for category 1 - 6 stocks

Work in progress

- Reference Points by stock by year
- Stock status table

Fisheries Overviews

Synthesize stock assessment output, catch statistics, and effort data for each ICES ecoregion using a streamlined and repeatable product with proper data provenance.

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Products and services implemented

- Web-services to link ICES databases with the Fisheries Overviews.
- Facility that hosts the R scripts, which take the data from these web-services, aggregate according to ecoregion, calculate indices, and plot the standard outputs for all ecoregions in a document that can then by developed into an ACOM-reviewed and agreed advisory publication.

Work in progress

- Centralize these operations and streamline the transfer of data from the databases into a final product that is reproducible for each ecoregion and advice publication.

Historic advice

Dataset of historical catch and landing statistics. This database was populated by extracting the data from historic advice tables from more than 260 pieces of published catch advice. Online tool will provide tabular output in various electronic formats.

Work in progress

- Standardize output format
- Extend the dataset, by including more stocks
- Online input
- Web based outputs services (by year, stock etc.) for software packages i.e. (R script)

Historic catch

Dataset of catch data (catch by year, area, country) provided in the ICES advice and reports. Online reporting tool providing tabular output in various electronic formats

Work in progress

- Standardize output format
- Import facility
- Table automation - synch with Rec-12 (Preliminary catch statistics) database

Web based services

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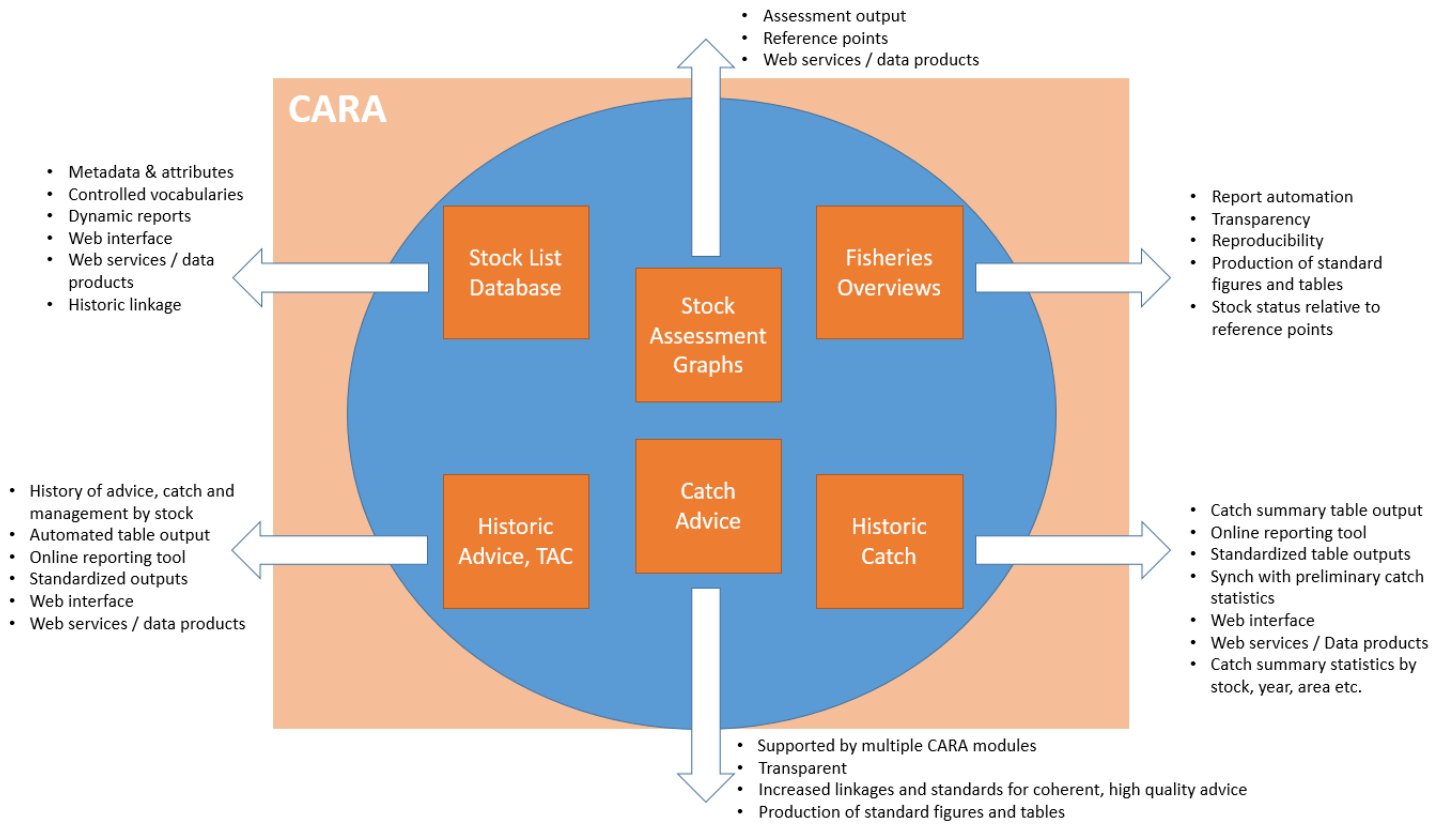

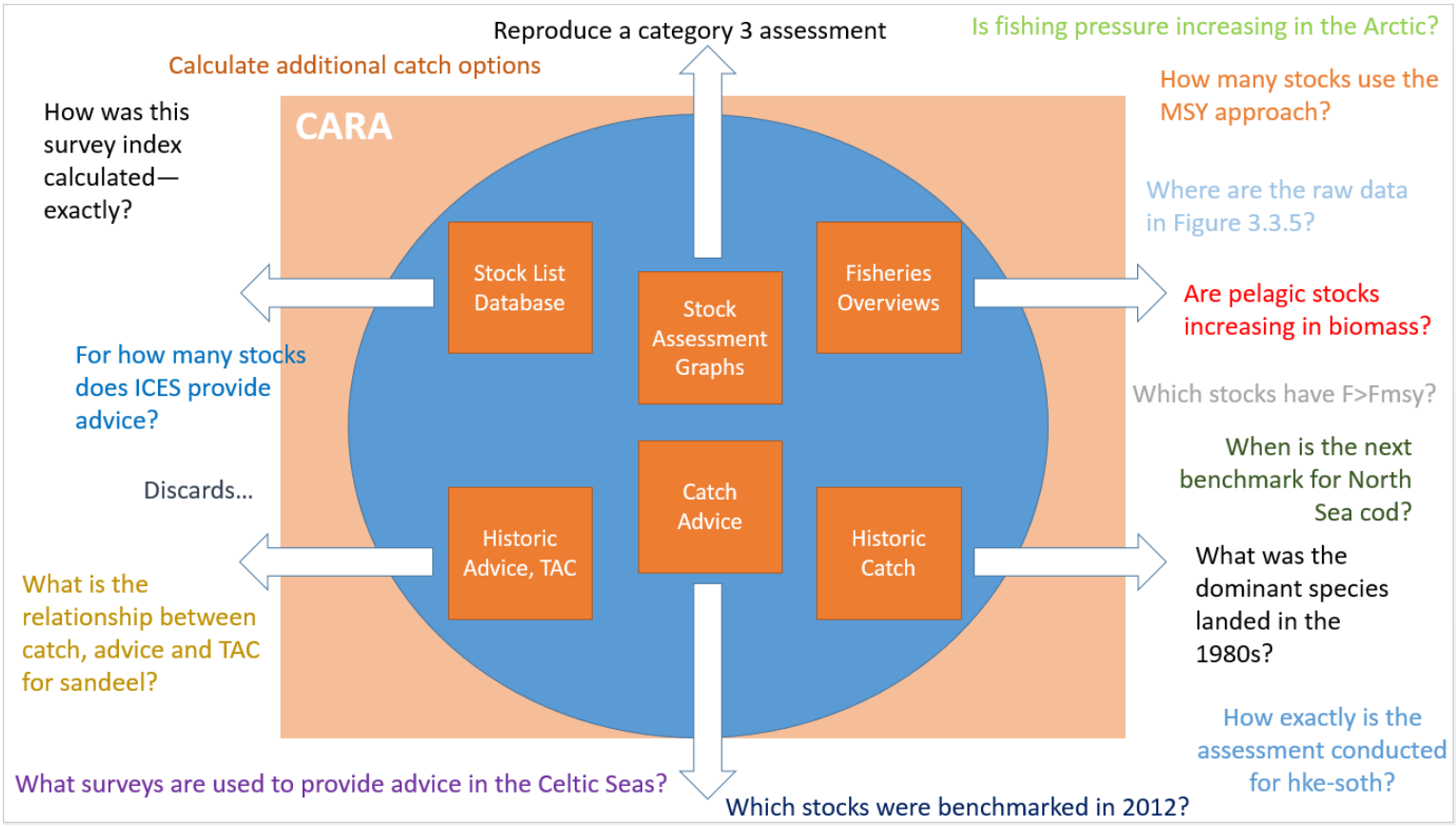

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International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

Council Meeting

October 2016

CM 2016 Del 11.1

Agenda item 11.1

Conflict of Interest policy and ICES Code of Conduct

The Publications and Communications Group (PUBCOM), as part of its Terms of Reference, deals with financial and editorial matters related to the ICES Journal of Marine Science (IJMS). During two consecutive years, 2015, and 2016 respectively a perceived Conflict of Interest arose within PUBCOM, associated with the appointment of the PUBCOM Chairs, as (Associate) Editor-in-Chiefs of Marine Journals with overlapping/competing ambition and scope. During 2015 a well-researched and detailed document was prepared by the SCICOM Chair, a designated SCICOM member, and the First-Vice president, to resolve the issue of the PUBCOM Chair. Bureau accepted the resignation in 2015 of the PUBCOM Chair, specifically based on the advice from two external cooperation partners, Oxford University Press (OUP – publisher of the IJMS) and the Committee on Publications Ethics (COPE) that a COI exists. The Bureau Statement, together with the background document was distributed within the ICES community. In August/September 2016 a similar situation occured in PUBCOM.

In order to deal with COI situations at ICES in the future, Bureau has developed a policy document on COI, including an outline for a process to be considered prior to and when COI situations arise.

It should be noted that the issue of Conflict of Interest is not trivial, and that it will never be possible to describe in detail all situations that might arise, nor will it be possible to describe in detail how to handle all situations. Apart from providing guidance in specific situations the aim of the CoI policy is also to create an internal environment within ICES, allowing for CoI to be openly discussed, to the benefit of the organization and the individual person.

The document should also serve as an external communication on Conflict of Interest being considered and handled within ICES, ensuring ICES is considered as an independent knowledge provider, guided by integrity and objectivity.

Council is invited to adopt the ICES Conflict of Interest Policy and Code of Conduct.

ICES Conflict of Interest Policy (CoI)

As a knowledge provider ICES depends both on the expertise of its participants, and on the perception of cooperation partners that ICES is independent, guided by integrity and objectivity

ICES must facilitate a transparent and consistent handling of situations where conflicts of interest (COI) may arise, to avoid the creation of an appearance of impropriety that can undermine confidence in the person.

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ICES stresses the importance to develop and sustain an open organizational culture where COI/measures dealing with COI can be freely raised and discussed.

The ICES Code of Conduct outlines how to address Conflicts of Interest.

ICES Code of Conduct (CoC)

The Code of Conduct consists of four components:

I Guiding principles for participating in ICES work

Recalling the vision and the mission of the International Council for the Exploration of the Sea, all those contributing to the work of ICES are expected to conduct themselves in a manner consistent with scientific independence, integrity, and impartiality.

II Definition of COI

In the context of this policy a conflict of interest means any interest by a participant that may affect or reasonably be perceived to affect the participants objectivity and independence in carrying out his/her work. A conflict of interest may exist even if no unethical or improper act results from it. The holding of interests does not automatically give rise to a conflict of interest, if the independence and objectivity of work to be carried out are not at risk.

III Declaration of interests

It is the responsibility of both the Chairs of the meetings as well as the national delegates (who nominate experts to participate in ICES work) to make the nominated participants aware of the ICES Conflict of Interest Policy.

The Chair should address the issues of Conflict of Interest in advance of, and at the beginning of each meeting. Meeting participants should be reminded of the duty to declare any interests in advance of the meeting/commencement of work.

The primary responsibility for assessing whether an interest might impede independence or influence judgement and for declaring any possible conflict of interest is placed on the person concerned.

IV How to proceed when a potential or perceived COI is identified

It is recognized that it is often difficult to objectively assess whether a conflict of interest situation exists.

In case of a potential/perceived COI, the procedure outlined below should be followed:

- the Expert Group/Committee Chair shall be notified with a short explanation of the nature of the potential conflict of interest, and will make a decision on the participation of the person in question. The Chair will inform the Secretariat and the national delegate about the decision;

- if the Chair finds that there is a need for further follow-up, the Chair will notify the Secretariat who will engage with the national delegate and share with the relevant committee;

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- if uncertainty remains as to how to proceed when a potential or perceived COI is communicated, the Chair will ask the Secretariat to give guidance.

- if there is still uncertainty (following consultation with the Chair/Secretariat/Coordination Group) about how to proceed given a potential or perceived COI, the Secretariat will ask the Bureau to make a decision.

To assess the extent of CoI, and ensure that it is being addressed in a consistent and transparent manner, Bureau will be provided with an annual report on CoI issues within ICES, and how they have been handled.

These issues will be discussed in the Coordination Group, to ensure dissemination of information across the organization, as well as consistency and transparency in the way issues are handled.