## Human Dimension Steering Group EGs Resolutions

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**Overview of expert groups transferred to Human Dimension Steering Group (HUDISG)**

The following expert groups will be parented by the Human Dimension Steering Group from 1 January 2024:

| WORKING GROUP | ACRONYM | TRANSFERRED FROM (SG) | CHAIR(S) PRIOR 1 JANUARY 2024 |
|---|---|---|---|
| Working Group on Economics | WGECON | HAPISG | Arina Motova (UK), J. Rasmus Nielsen (Denmark), and Olivier Thébaud (France) |
| Working Group on the History of Fish and Fisheries | WGHIST | HAPISG | Bryony Caswell (UK), and Camilla Sguotti (Italy) |
| Working Group Marine Planning and Coastal Zone Management | WGMPCZM | HAPISG | Caitriona Nic Aonghusa (Ireland), and Talya ten Brink (USA) |
| Working Group on Balancing Economic, Social and Ecological Objectives | WGBESEO | IEASG | David Goldsborough (Netherlands), David Langlet (Sweden), and Paulina Ramirez-Monsalve (Denmark) |
| Working Group on Maritime Systems | WGMARS | IEASG | Jessica Fuller (Norway), Patricia Clay (USA), Leyre Goti (Germany) and Jennifer Bailey (Norway) |
| Working Group on Social indicators | WGSOCIAL | IEASG | Amber Himes-Cornell (FAO) and Marloes Kraan (Netherlands) |
| Working Group on Resilience and Marine Ecosystem Services | WGRMES | EPDSG | Andrea Belgrano (Sweden), Yajie Liu (Norway), and Pablo Pita (Spain) |

## Draft Resolutions pending approval

**Working Group on Balancing Economic, Social, and Ecological Objectives in Integrated Assessments (WGBESEO)**

*2023/MT/HUDISG00* *Placeholder - To be submitted (pending)*

## Resolutions approved in 2023

### Working Group on Economics (WGECON)

**2023/MT/HUDISG01** The **Working Group on Economics** (WGECON), chaired by Arina Motova, UK, Angela Muench, UK* and Geret de Piper, USA* will work on ToRs and generate deliverables as listed in the Table below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2024 | TBD | TBD | | Continuing: Arina Motova<br>Incoming: Geret de Piper, Angela Muench |
| Year 2025 | TBD | TBD | | |
| Year 2026 | TBD | TBD | Final report by early December to SCICOM | |

**ToR descriptors**

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | Build additional capacity for economic science in ICES, giving consideration to research and institutional needs in all ICES member countries, as well as useful connections to international marine/ fisheries economics organisations such as IIFET, NAAFE, EAFE, STECF, and others. | This builds on the efforts within ICES carried out by WGECON over its first two terms, expands the capacity building efforts, and ensures coordination of activities with other international bodies and links to the wider scoping work in the Human Dimensions Steering Group. It also includes the assessment of needs and opportunities for ICES training in fisheries economics. | 6.3; 6.4; 7.3 | 3 years | Annual e-evaluation and final report sections on coordination activities |
| b | Identify and report on economic data-related needs and priorities for short and longer-term economic data collection, access and analysis; and where possible propose systems to collect missing data. | To aid prioritisation and harmonisation in data collection, management and analysis, to enable quantitative economic analyses, and develop and share related methods and tools. The ToR links to ICES Data Centre and national and international economic data collection requirements (e.g. EUMAP). | 3.1; 3.2; 4.2 | 3 years | Final report section on prioritisation |

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| c | Demonstrate the approaches, methods, tools and information flow needed to provide analysis of trade-offs relating to science-based fisheries management advice. | To develop and expand the tools, expertise and processes to support the inclusion of economic dimensions in ICES science and informing potential future requests for advice. | 5.3; 6.1; 7.6 | 3 years | Final report section on developments and potential scientific manuscript |
| d | Assess and report on economic aspects of fisheries systems and their management for selected topics and/or regions in the ICES area. | To support responses to potential future reporting requests, using a case study approach (e.g. development of ecosystem and/or fisheries overviews). | 6.6; 7.1; 7.2 | 3 years | Final report section on case-study based identifications and assessments, contributions to relevant advisory products, and potential scientific manuscript |
| e | Coordinate the provision of economic analysis as part of integrated socio-ecological evaluations in support of ecosystem-based fisheries management. | Building on results from ToRs b), c) and d), to contribute to the development of a framework for integrated assessment of alternative scenarios for marine fisheries and interactions with other sectors, as part of broader ecosystem-based management approaches, within ICES. | 2.7, 6.5, 6.6, 7.1, 7.2 | 3 years | Final report section on economic contribution to integrated assessment framework (case study based) |

**Summary of the Work Plan**

| | |
|---|---|
| Year 1 | • Continue work started by WGECON in 2018-2023 on identifying needs for economic science in ices, data gaps and opportunities to provide trade-off analysis, building the ices capacity to integrate economic dimensions in fisheries management advice:<br>o Build-upon the case study work underway in 2023, and request data from ICES MS to address these where necessary;<br>o In collaboration with especially ICES WGSOCIAL, continue integration of human dimensions into Ecosystems Overviews (EOS) and explore the option to integrate human dimension into other advice products, for example fisheries overview.<br>o Continue sharing methodologies of economic data collection / analysis and modelling, and integrated assessment with other ICES working groups and ICES SCICOM and ACOM.<br>• Produce e-evaluation. |

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| Year 2 | • Progress case study work and inclusion of human dimensions in Eos and other advice products if feasible.<br>• Develop manuscripts presenting results of case study work.<br>• Continue sharing methodologies of economic data collection / analysis and modelling, and integrated assessment with other ICES working groups and ICES SCICOM and ACOM.<br>• Produce e-evaluation. |
| Year 3 | • Finalise case study work manuscripts.<br>• Discuss and plan strategies and concrete steps for future work.<br>• Produce Final Report. |

**Supporting information**

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| Priority | Member countries are concerned about fish stocks and marine ecosystems not least of which because of their contribution to human wellbeing and economic welfare. The economic dimension should be an integral part of marine science and scientific advice regarding the use and conservation of marine resources.<br><br>Demand for science and advice to address economic considerations is increasing, but ICES does not engage many economists or address economic issues in many member countries in its existing work. The efforts of the Strategic Initiative on the Human Dimension (SIHD) with ICES have served to raise the profile of economics and social aspects in relation to fisheries in the last few years, but, with a few exceptions, SIHD efforts are not yet comprehensively supported and informed by the work of the ICES EG. Further, among the ICES groups addressing economic issues (e.g. WGMIXFISH, WGRFS, WGOWDF, WGSEDA), only WGECON focuses on the development of fisheries economic metrics and core fishery economic analyses that are demanded in parts of the ICES network (e.g. further development of ecosystem overviews) and, in some cases, by ICES advice requestors.<br><br>The need to expand the engagement of ICES in economics was also reflected in the outcomes of many recent meetings, especially the "Understanding marine socio-ecological systems" (MSEAS) Conference which ICES co-sponsored in Brest in 2016, as well as the results from the ICES working group on Integrating. Ecological and Economic Models (WGIMM). Other drivers include high level aspirations for Blue Growth in European countries and globally, the interest in accounting for economic objectives such as Maximum Economic Yield as well as for the United Nations sustainable development goals in management advice, and a desire to understand economic consequences of human-induced changes in the sea (WGHIST). There is also recognition in ICES, and from its advice requestors, that it would be desirable to add economic metrics to ICES ecosystem overviews and better recognise people and their livelihoods as part of the ecosystem. WGECON Chairs will coordinate with HUDISG Chair to capitalize on synergies across HUDISG Working Groups and identify potentail collaborations across ICES more broadly. |
| Resource requirements | The group will rely on ongoing international and national research projects with active involvement of WGECON members. The additional resources required to undertake additional activities in the framework of this group is negligible. |
| Participants | The Group is normally attended by some 20–30 members and guests. |
| Secretariat facilities | Standard support to EG. |
| Financial | No financial implications. |

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| Linkages to ACOM and group under ACOM | There are currently no linkages with ACOM, but the EG is working on providing standards for economic advice, on top of the biological advice, which should be relevant to ACOM. The EG will be ready to address advisory requests if these are forthcoming and possible to achieve with available efforts. |
| Linkages to other committees or groups | The subject area of this EG has close linkage with at least the following ICES groups: WGMIXFISH, WGSEDA,WGIMM, WGSPA, WGRMES, WGNARS, WGHIST, WGBESEO,WKTRADE 4, WGOWDFas well as the ICES HUSISG and IEASG groups. The working group has initiated strong cooperation and relationship with WGSOCIAL. |
| Linkages to other organizations | International Institute of Fisheries Economics and Trade (IIFET), North American Association, of Fisheries Economists (NAAFE), European Association of Fisheries Economists (EAFE), EU Scientific, Technical and Economic Committee for Fisheries (STECF), Food and Agriculture Organisation of the United Nations (FAO), Organisation for Economic Cooperation and Development (OECD). |

**Working Group on the History of Fish and Fisheries (WGHIST)**

**2023/MT/HUDISG02** The **Working Group on the History of Fish and Fisheries** (WGHIST), chaired by Bryony Caswell, UK; Camilla Sguotti, Italy and Jacopo Bernardi*, Italy will work on ToRs and generate deliverables as listed in the Table below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2024 | 4-6 June | Online meeting | E-report within 10 days of annual meeting | Jacopo Bernardi to join as 3rd chair |
| Year 2025 | TBD | TBD | E-report within 10 days of annual meeting | |
| Year 2026 | TBD | TBD | E-report within 10 days of annual meetingand final report to SCICOM by early December | |

**ToR descriptors**

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | Collect, assemble, and, integrate meta-data on marine social-ecological systems through time and develop links with historical data management bodies (within and beyond ICES) to: explore shared interests and compatibilities, and collaboratively develop data products to encourage the use, preservation, and maintenance of historical | Data from WGHIST supports the development of tools for marine living resource management and provides a resource of historical and long-term information for the global community via the ICES Data centre. In addition, WGHIST can work with the ICES Data Centre and others to identify further opportunities for promoting and facilitating | 6.1, 7.7 | 3 years | Digital products, such as refining the indexing WGHIST metadata on the ICES Spatial Facility.<br><br>Guidelines on best practice within ICES and beyond for accessing, using and/or applying historical data to contemporary advice for management. |

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| | data. | access to historical and archival resources housed by other institutions (e.g. by collating and digitizing them). WGHIST can also work with other experts to develop guidelines for best practises in using of long-term data for research and management. | | | |
| b | Explore the actual or potential synergies between different kinds of historical data and provide tools both for communicating, and for bridging disciplinary differences in data usage | Historical data comes in many forms, and often requires an open and responsive approach to its usage. When 'traditional' (i.e. independently verifiable and/or quantitative) data is missing or incomplete, it may be supplemented by 'non-traditional' (i.e. qualitative and/or or less easily verified) data. These non-traditional data can be more challenging to integrate into management which predominantly focuses on using modern, quantitative data. WGHIST is uniquely placed to facilitate cross-disciplinary discussions on how to overcome these challenges, and on best practices for effective integration of 'traditional' and 'non-traditional' historical data for science and management. | 7.7 | 3 years | Outputs providing resources such as: information on best practice and examples of interdiciplinary working. Including, how to understand and the overcome the challenges and constraints of using different kinds of data; with links to other relevant resources that can help to address the integration of different data types for effective and high-quality research. |
| c | Evaluate long-term changes within marine social-ecological systems, and explore how this knowledge can be applied to contemporary science and management. | The interdisciplinary nature of WGHIST, with expertise in marine ecology, fisheries biology, historical ecology, palaeo-ecology, social and environmental history, offers a unique forum for conducting transdisciplinary research into marine social-ecological systems. It may therefore provide unique data and knowledge that can be leveraged to improve our | 2.2, 4.5, 5.4, 7.7 | 3 years | Submission of one manuscript about past dynamics of marine ecosystems and populations and their resilience through time.<br><br>Submission of manuscript: Research roadmap on how history can help understand past marine functional connectivity. For an |

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| | | understanding of social-ecological systems and their dynamics through time. In particular, data could be used to help developing baselines of past ecosystem status and understand the importance and direction of drivers in the past. This could ultimately help provide indicators of environmental status. | | | ICES special issue from the Sesimbra meeting.<br><br>Scientific publication about the utilization of pictures and qualitative sources to inform management (deliverabe for ToR b as well)<br><br>Plan how historical data can be incorporated into Ecosystem/Fishery Overviews |
| d | Explore the utility of historical data for understanding the social-ecological outcomes of emerging management strategies. | WGHIST is unique in bringing together specialists from very different fields who have particular interests in using unconventional resources and approaches, and interdisciplinary methodologies to interpret social-ecological trends over long (decadal to centennial) periods of time. With many new challenges becoming apparent in the 21st Century, so too are new ways of thinking and innovative solutions for how global society may continue to develop, and how we may in turn manage our resource use. WGHIST can provide valuable context on the possible outcomes from these strategies, in particular the response of human societies to past development. For instance, (a) attitudinal and behavioural shifts in effective resource management, and (b) changing patterns of access and use-rights. | 2.2, 2.7, 7.7 | 3 years | Submission of one manuscript about the lessons we can learn from historical examples to facilitate the effectivness of contenmporary ecosystem based management |

## Summary of the Work Plan

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| Year 1 | In Year 1, WGHIST will work with the ICES Data Centre and external bodies to explore the opportunities for developing data products that encourage use of and enhance the visibility of historical and long-term data (ToR a). Production of resources on best practice guidelines (ToRs a, b) has already started in the previous iteration and will continue from Year 1 onwards (ToR b). Work started in the previous iteration to understand how historical management application can help facilitate the operationalisation of ecosystem-based management at present will also continue in Year 1 (ToR d). Potential areas of interest already identified by WGHIST members for ToRs c and d include: quantifying changes in ecosystem services over time, and invoking cross- disciplinary knowledge to expand our understanding of linked social-ecological system change through time. Post-meeting work will involve soliciting contributions from the wider WGHIST membership list and continued development of manuscripts.<br><br>We are joining with WGMARS to propose a theme session at ICES ASC 2024 that bridges interests between WGHIST, WFMARS, WGECON and WGSOCIAL which will feed into ToR b and c. At the WGHIST 2024 meeting we will discuss establishing more links with HUDISG and other WG with expertise relevant to WGHIST aims, through invitation WG Chairs to the WGHIST meeting, whether in person or remotely. These efforts aim to strengthen cross-disciplinary ties and enhance communication and learning among ICES WGs. Links with external groups will also be maintained (e.g. Oceans Past Initiative, QMARE, MAF-World and Sea-Unicorn COST actions) and expanded (e.g. PICES, and the Ocean Biogeographic Information System) to enhance interdisciplinary learning and collaboration. E-report to ICES 10 days after the annual meeting |
| Year 2,3 | In years 2 and 3 WGHIST will continue to develop digital tools for historical metadata, explore opportunities for improving the accessibility of historical data for use by the scientific community, and develop protocols for best practise when using historical data, potentially in collaboration with the ICES Data Centre and other WGs. While these tools will be finalised in year 3, it is our hope that progress will be ongoing throughout years 1 and 2, including the provision of digital updates to the ICES community during this time. Years 2 and 3 will also see progress on the proposed manuscripts and perspective pieces, and the WGHIST chairs will work to maintain and enhance connections with other relevant WG, and external bodies as above. Year 2 will forward manuscript and guidelines in our ToRs, specific research from WGHIST members will be used to expand this work. Submit e-report to IVCES 10 days after the annual meeetings in 2025 and 2026, full final report to Sci-Comm in December 2026. We hope to submit two of the manuscripts for ToR c-d by the end of year 2. Any other outstanding deliverables will then be completed in Year 3. |

## Supporting information

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| Priority | The value of historical marine ecology and historical data for evaluating current ecosystem health has been well established in the literature. Understanding social-ecological change – and in particular, long-term trends in social-ecological interactions and their current impacts – has great potential for informing decision making and management of ecosystems and marine service industries in the future.<br>**Scientific Scope:** WGHIST will continue to operationalize historical data for addressing contemporary scientific questions and future management needs. This iteration of WGHIST will prioritise the capture, assembly, and integration of data on ecosystem changes resulting from interactions between social and ecological systems over time, and it will conduct interdisciplinary research based on this data. In this way, it may inform the future management and decision-making of marine resource use. Moreover, since the social dimension is particulary relevant in WGHIST we have the potential to help in better including the human dimensions in management and decisions. |

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| Resource requirements | WGHIST will continue to consult with ICES Data Centre staff, as well as informally with data management experts and gatekeepers beyond ICES, in order to facilitate (and refine best-practice for) the assembly and integration of metadata within and beyond the organisation. New WGHIST Chairs will contact HUDISG chair to broaden still further the scope for intra-ICES collaboration on the collation, integration and best use of historical data in management and future decision-making.<br><br>The lessons from this iteration's hybrid WGHIST meetings, and the broader lessons to be taken from the impact of COVID-19 on organisational and administrative paradigms, suggest, although challenging, the high value in the future of continuing hybrid meetings, conferences and consultations. A survey conducted among the members this year has highlighted the importance of continuing hybrid meetings (although in-person attendance has dropped off). Any assistance that ICES can offer for supporting remote consultation and meetings would be very much appreciated. |
| Participants | The chairs will review, and seek to enhance, group membership early in the new iteration of WGHIST. Currently, the members include ecologists, historians, social scientists, economists, policy experts and data analysts working in or connected to historical marine ecology, and we will seek to ensure that this diversity is maintained throughout the next group iteration. Hybrid meetings have resulted in an attendance of around 30 people, that this core group could potentially be greatly enhanced with the further use of remote technologies – either for individual participants who are unable to attend in person, or for the organisation of the meeting as a whole. The results of our member survey and member consultation at WGHIST 2023 have led us to try and co-oridante more joint meetings that can minimise travel. |
| Secretariat facilities | Standard EG support (potentially meeting rooms & remote capabilities). |
| Financial | No financial implications. |
| Linkages to ACOM and group under ACOM | WGHIST will actively seek out connections within ACOM for the application of historical ecology work into scientific advice (e.g. stock baselines, change through time, context for IEAs, etc). |
| Linkages to other committees or groups | In the previous iteration we had linkages with HAPISG, WGMBRED, WGMHM, we are building links withHUDISG, WGECON, WGSOCIAL, ECS and WGMARS. Other potential links to other WGsTBS ACOM, EPDSG, IEASG, SIHD as well as WGBIODIV, WGBFAS, WGECO, WGMIXFISH, WGRMES, WGSAM, DIG andWGSEDA depending on interest and availability of committee and group members to join in person or remotely. |
| Linkages to other organizations | Participants in the Past Global Changes (PAGES) working gorup QMARE: Disentangling climate and pre-industrial human impacts on marine ecosystems and the Oceans Past Initiative (OPI) will be interested in our work and outcomes, and WGHIST will further enhance existing links with this group. We are also collaborating with several EU cost actions MAF-World and Sea-Unicorn. WGHIST has an international participation beyond ICES member countries (including Australia, South Africa and Italy) and these will be maintained and, where possible, further enhanced. We intend to work together with the Ocean Biodiversity Information System (OBIS) executive to make historical data (metadata as a minimum) on fish and fisheries available through the OBIS portal. |

**Working Group on Resilience and Marine Ecosystem Services (WGRMES)**

**2023/MT/HUDISG03 A Working Group on Resilience and Marine Ecosystem Services (WGRMES),** co-chaired by Andrea Belgrano, Sweden; Yajie Liu, Norway and Arantza Murillas*, Spain, will work on ToRs and generate deliverables as listed in the Tables below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2024 | TBD | AZTI, Bilbao, Spain | Interim report by 1 December 2024 to HUDISG | Pablo Pita, Spain will be replaced by Arantza Murillas, Spain |
| Year 2025 | TBD | TBD | Interim report by Date Month May to HUDISG | |
| Year 2026 | TBD | TBD | Final report by Date Month May to HUDISG | |

**ToR descriptors**

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | To document resilience of marine ecosystem services by using case studies in Europe at different scales (local, regional, national). | Information, data and evidence on resilience and marine ecosystem services (and nature contribution to people) are scarce and not organized. Links to ICES Science Plan priorities areas: Ecosystem scince; Impacts of human activities, Conservation and management science, Sea and society; and WGs described below. | 1.3; 2.1; 2.4 | 3 years | -Interim report<br>- A review paper on resilience of marine ecosystem in relation to fisheries and ecosystem services.<br>-Public online repository of data/case studies.<br>-Special Session at ICES Conference |
| b | To review and document multidimensional valuation of marine ecosystem services. | Valuing marine ES is key for policy makers. This task will be directly linked with the IPBES Global Multiple Values Assessment and the IPBES Global Nexus Assessment. Links to ICES Science Plan priorities areas: Ecosystem science; Impacts of human activities, Conservation and management science, Sea and society; and WGs described below. | 3.6; 6.1; 6.5 | 3 yesrs | -Interim report<br>-A review paper on multidimensional values of marine ecosystem services<br>-Special Session at ICES Conference |
| c | To document and analyse transformative changes of marine social-ecological systems towards ocean equity. | Document fundamental changes (including property rights, management systems and Marine Protected Areas) which facilitate transformations of social groups. Links to ICES Science Plan 1st, 2nd and 3rd thematic areas, and WGs described above and below. This task will be directly linked with the IPBES Global Transformative Change Assessment, and the Strategic Initiative | 6.4; 6.5; 7.4 | 3 years | -Interim report<br>-A review paper<br>-Database with marine seeds for a good Anthropocene linking marine social-ecological information in collaboration with the EqualSea Lab |

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| | | on the Human Dimension, and the High-Level Panel for a Sustainable Ocean Economy. Links to ICES Science Plan priorities areas: Ecosystem science; Impacts of human activities, Conservation and management science, Sea and society; and WGs described below. | | | -Special Session at ICES Conference<br>-Special Issue about Ocean Equity<br>- |
| d | To evaluate and document marine ecosystem services for different ecosystems, ECOregions and other case studies in Europe and beyond. | To assess marine ecosystem services, or changes in marine ecosystems through ecosystem services assessment in terms of values and/indicators given specific valuation tools and, marine ecosystems or case studies. Especially relevance will be the implementation and/or transference of common tools and indicators across large ECOregions. These values can be used for integrated assessments and fisheries management or implementing trade-offs analysis. Links to ICES Science Plan priorities areas: Ecosystem scince; Impacts of human activities, Conservation and management science, Sea and society; and WGs described below. | 3.6; 6.1; 6.5 | 3 years | -Interim report<br>-A review paper<br>-<br>- common tools and indicators for assessing trade-offs in integrated assessments of fisheries management<br>- Special session at ICES conference<br>-initiate collaborative work to create synergies with other HUDISG WGs for the inclusion of Marine Ecosystem Services consideration for the ICES Advice on EOs. |

**Summary of the Work Plan**

Establishing specific deadlines for each deliverable is challenging due to ongoing nature of the research, which is dependent on related projects and ongoing research within the working group. Furthermore, the ultimate goal is for the research results to contribute to the ICES EOs advice. This collaborative process aligns with the mutual desires of both our working group and the Eos groups.

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|---|---|
| Year 1 | • Document and review of existing conceptual frameworks, methodologies and tools to analyse and operationalize resilience to monitor sustainability of marine ecosystem services.<br>• Draft the review paper(s);<br>• look for funding opportunities;<br>• Collecting information and data for building database;<br>• initiate collaborative work to create synergies with other HUDISG WGs for the inclusion of Marine Ecosystem Services consideration for the ICES Advice on EOs. |
| Year 2 | • Understand the role of tangible and intangible benefits of the oceans to human well-being from fisheries and aquaculture sectors and their associated value chains.<br>• Draft and revise the review paper(s);<br>• look for funding opportunities;<br>• Compile and build database;<br>• consolidate the collaboration with other HUDISG WGs to develop a product on Marine Ecosystem Services for contributing to the ICES ADVICE on EOs. |

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| Year 3 | • Document and review transformative changes of marine social-ecological systems, including commercial and recreational fisheries, and aquaculture. Provide a better understanding on how fisheries resources, governance institutions and actors learn and respond to diverse drivers of climate change and other human-induced drivers, as well as to design policies and actions aimed at building resilience. Review what plausible pathways exist for achieving the UN 2030 SDGS and the 2050 Vision for Biodiversity.<br>• revise and submit the review paper(s);<br>• look for funding opportunities;<br>• Build database;<br>• based on case study or specific Eco region, if appropriate, contribute input to Eos advice<br>• Finalize in collaboration with other HUDISG WGs a product on Marine Ecosystem Services for contributing to the ICES ADVICE on EOs. |

**Supporting information**

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|---|---|
| Priority | Very high. The current activities of this Group will lead ICES into issues related to marine ecosystem services, integrating fisheries management and transformative changes towards ocean equity. Consequently, these activities are considered to have a very high priority. |
| Resource requirements | The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible. |
| Participants | The Group is normally attended by some 20–25 members and guests. |
| Secretariat facilities | Standard EG support |
| Financial | No financial implications. The WGREMS will explore funding opportunities from EU and International calls and others to support and expand the activities inside and outside Europe. |
| Linkages to ACOM and groups under ACOM | AFWG; WGRFS |
| Linkages to other committees or groups | It has become part of HUDSIG, and there are close working relationships with WGBIODIV, WGECON, WGSOCIAL, WGINOSE, WGIAB, WGMHM, WGMPCZM, WGSFD, WGISUR, WGMARS, WGECO, WGBESEO, WGENGAGE and SICCME. |
| Linkages to other organizations | The work of this group is aligned with other global nodes of ES research such as the IPBES, Future Earth, and the Ecosystem Services Parternship. The work is also in line with the Natural Capital Project (http://www.naturalcapitalproject.org/), ++ and numerous scientific and regualatory governmental and university's departments in ICES countries. |

**Workshop on Participatory Modelling (WKParticipatoryModelling)**

**2023/MT/HUDISG04** The **Workshop on Participatory Modelling (WKParticipatoryModelling)**, chaired by Jacob Bentley (United Kingdom) and Benjamin Planque (Norway) will be established and will meet in Copenhagen, Denmark, 7 to 11 October 2024 to work on the following Terms of Reference (ToRs):

a) Review experiences of participatory modelling in marine science, both inside and outside of ICES; (Science Plan codes: 7.5, 7.7);
b) Identify candidate studies or assessments within ICES that would benefit from participatory modelling; (Science Plan codes: 7.5, 7.7);
c) Develop a framework for participatory modelling within ICES by building on experiences and literature; (Science Plan codes: 7.5, 7.7).

WKParticipatoryModelling will report by 22 November 2024 for the attention of ACOM and SCICOM.

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|---|---|
| Priority | Very high. The current activities of this Group will lead ICES into issues related to marine ecosystem services, integrating fisheries management and transformative changes towards ocean equity. Consequently, these activities are considered to have a very high priority. |

Scientific justification

**Term of Reference a)**

ICES now has a Stakeholder Engagement Strategy which outlines the key principles of stake holder engagement and defines the roles of stakeholders and scientists in the engagement. The recent Workshop on the Implementation of the Stakeholder Engagement Strategy (WKSTIMP) defined a suite of actions to make the ICES strategy work. Initiatives to reinforce the strategy include the development of guidelines for integrity and the accountability of stakeholder perceptions. Participatory modelling is well routed in the scientific literature and frequently occurs across ICES groups and workshops (e.g., IEA groups and WKIRISH). However, its application within ICES seems inconsistent. ToR a) will explore 1) different definitions and interpretations of participatory modelling, 2) where and how participatory modelling has been applied within and external to ICES, learning from both positive and negative experiences (e.g., Sterling et al., 2019), and 3) which frameworks already exist and may be appropriate for use across ICES. We will also aim to assess the importance of participatory modelling and the existing demand for the approach from stakeholders (e.g., Voinov et al., 2016). The objective is to understand the experiences of researchers and stakeholders and use this knowledge to inform a framework for participatory modelling within ICES. Particular focus will be given to the application of conceptual frameworks for Integrated Ecosystem Assessments, as this is an area relevant to ICES where we have seen the greatest participation of stakeholders within ICES (ICES 2022) and elsewhere (e.g., Ingram et al., 2018).

**Term of Reference b)**

We will use lessons from ToR a) to identify case studies where participatory modelling is needed in order to (i) enhance science and advice, (ii) increase transparency in the provision of advice and ultimately (iii) increase buy-in by relevant end-users. Participatory modelling has the potential to facilitate and structure discussions between scientists and stakeholders about uncertainties and the quality of the knowledge base. It can also contribute to collective learning, increase legitimacy, and advance scientific understanding (Röckmann et al., 2012). ToR b will identify a set of case studies in existing ICES expert groups that are expected to directly benefit from transitioning to participatory modelling.

**Term of Reference c)**

To encourage further instances of participatory modelling which are in line with ICES Stakeholder Engagement Strategy and consistent application, ToR c will propose a framework which ensures that (i) a participatory approach is justified, (ii) models are communicable and transparent to stakeholders (e.g., in their function and assumptions), (iii) approaches are robust and appropriately facilitated, (iv) co-production principles are applied (i.e., engagement early and often), and (v) instances of participatory modelling are effectively monitored and evaluated.

**References**

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| | Sterling, E.J., Zellner, M., Jenni, K.E., Leong, K., Glynn, P.D., BenDor, T.K., Bommel, P., Hubacek, K., Jetter, A.J., Jordan, R. and Olabisi, L.S., 2019. Try, try again: Lessons learned from success and failure in participatory modeling. *Elem Sci Anth*, *7*, p.9.<br>Voinov, A., Kolagani, N., McCall, M.K., Glynn, P.D., Kragt, M.E., Ostermann, F.O., Pierce, S.A. and Ramu, P., 2016. Modelling with stakeholders–next generation. *Environmental Modelling & Software*, *77*, pp.196-220. |
| Resource requirements | Hybrid meeting (online component only in mornings) |
| Participants | This workshop will be of interest to participants who are involved in modelling, social science, stakeholder engagement, local ecological knowledge, and transdisciplinary methods. Members from IEASG and HUDISG may be particularly interested. Chairs intend to reach out to a list of participants who are heavily involved in this work area (also open to nomina tions from SCICOM), with wider attendance being driven by advertising of the WK on the ICES website and social media. |
| Secretariat facilities | Meeting facilities (in person and online), registration support |
| Financial | No financial implications. |
| Linkages to Advisory Committee | ACOM, SCICOM |
| Linkages to other committees or groups | HUDISG, WKSTIMP, ICES Stakeholder Engagement Strategy, WKAFPA, WGSOCIAL, WGMARS, WGIPEM, WGSAM, IEASG, HAPISG, ASG, FRSG |
| Linkages to other organizations | NGOs, marine sectors (e.g., fisheries and OFW), advice requesters |

**Working Group on Social Indicators (WGSOCIAL)**

**2023/MT/HUDISG05** ICES **Working Group on Social Indicators (WGSOCIAL)**, chaired by Cristina Pita*, (Portugal) and Edd Hind-Ozan* (United Kingdom), will work on ToRs and generate deliverables as listed in the Table below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2024 | TBD | TBD | E-evaluation | |
| Year 2025 | TBD | TBD | E-evaluation | |
| Year 2026 | TBD | TBD | Final year E-eval TBD 2026<br>Final ICES Scientific report TBD 2026 | |

**ToR descriptors**

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | To continue building capacity for social science in ICES, giving consideration to research and institutional needs in all ICES member countries, as well as delivering training on social science methods and creating useful connections to international marine/ fisheries social science organizations, such as the Society for Applied Anthropology and the Centre for Maritime Research (MARE). | This builds on the initial scoping exercise within ICES and the SIHD (now HUDISG) to expand social science capacity building efforts, but also ensures coordination of activities with other international bodies | 3.6, 5.4, 6.6, 7.1-7.7 | Years 1 –3 | Annual reporting, potentially also scientific manuscript |
| b | To identify and report on culturally relevant social indicators and community knowledge gaps that point to priorities for coordinated research, data and knowledge collection, and institutional needs, and where possible propose systems to collect missing data and knowledge. | To aid prioritization of data and knowledge collection, management and analysis to enable qualitative and quantitative analyses of social issues for Ecosystem Overviews, Integrated Ecosystem Assessments and future advice requests. The ToR also links to ICES Data Centre. | 2.7, 4.2, 5.4, 6.5, 6.6, 7.1, 7.2, 7.7 | Years 1 –3 | Annual reporting |
| c | To investigate the approaches, methods, tools and information flow needed to provide trade-off analysis of the impacts of management scenarios on society on communities and stakeholders. | To develop a system to support potential future advice requests and development of Ecosystem Overviews and Integrated Ecosystem Assessments. | 5.4, 5.8, 6.2, 6.3, 6.4, 6.5, 6.6, 7.1,7.3, 7.5, 7.6 | Years 1 –3 | Annual reporting, potentially also scientific manuscript(s) |
| d | To assess and report on the social and cultural significance of commercial fishing and its management for selected coastal regions in the ICES area. | To support future potential advice requests and development of Ecosystem Overviews and Integrated Ecosystem Assessments. | 2.7, 5.4, 5.8, 6.4, 6.5, 6.6, 7.1, 7.2, 7,4, 7.7 | Years 1 –3 | Annual reporting |

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| e | To coordinate the provision of culturally relevant context, social indicators and analysis as part of integrated socio-ecological evaluations in support of Ecosystem-Based Management and fisheries advice | To contribute to the development of a framework for integrated assessment of alternative scenarios for marine fisheries, as part of broader Ecosystem-Based Management approaches. | 2.7, 4.3, 6.2, 6.3, 6.4, 6.5, 6.6,, 7.1-7.7 | Years 1 –3 | Annual reporting |

**Summary of the Work Plan**

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| Year 1 | Continue the current work and identification of ongoing needs for social science in ICES (ToR a). Continue defining culturally relevant social indicators and identifying data gaps for specific contexts and applications (ToR b). Link with the work on social indicators of STECF. Start work on defining the information flow needed to provide trade-off analysis (ToR c). Develop and maintain connections with other relevant groups within and outside ICES (ToRs a and e). Collaborate with other WGs in HUDISG to develop shared case studies, like we did with WGECON in 21-23 (ToR e). Aim to complete 2 planned manuscripts (Fishing communities and social indicators review). Produce Interim Report. |
| Year 2 | Work on case studies with HUDISG WGs (ToRs b, c and d), develop new manuscripts and on assessing the social and cultural significance of commercial fishing (ToR d). Work with other relevant groups within and outside ICES (ToR e). Produce Interim Report. |
| Year 3 | Work on case studies with HUDISG WGs (ToRs b, c and d) and on assessing the social and cultural significance of commercial fishing (ToR d). Aim to complete manuscripts developed in year 2. Discuss and plan strategies and concrete steps for future work. Produce Final Report. |

**Supporting information**

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| Priority | Nations are concerned about the sustainability of fish stocks and marine ecosystems, not least because they can contribute to human well-being and food security; therefore, these natural resources have a societal value. The social dimension is increasingly an integral part of marine science and scientific advice regarding the use and conservation of marine resources.<br>In 2017, ICES realised that the demand for science and advice to address social and societal considerations was increasing, and the Strategic Initiative on the Human Dimension (SIHD) has served to raise the profile of social science in ICES in the last few years towards full integration with the HUDISG (2023). With WGSOCIAL, ICES has an EG that addresses social issues and focuses primarily on the development of social metrics and core social analyses that are demanded in parts of the ICES network and useful for ecosystem advice in the future. WGSOCIALs contribution to the Ecosystem Overviews by adding fishing communities to the map can be seen as a first step.<br>The benefits of expanding the engagement of ICES in social science were highlighted in the MSEAS meeting 2016. A second MSEAS meeting planned for 2024.. It is clear that interest is growing for interdisciplinary approaches as well as for social indicators. DGMARE has progressed with developing the social dimension of the Common Fisheries Policy. WGSOCIAL keeps close contact with and members participate in social expert groups of the STECF. Within ICES there is recognition that it is desirable to add social metrics to ICES ecosystem overviews and thus to recognize people and their livelihoods as part of the ecosystem. |
| Resource requirements | The group will rely on ongoing international and national research projects to support involvement of WGSOCIAL members. WGSOCIAL will work with the ICES Data Centre to obtain port data in order to develop a socio-economic product for the ecosystem overviews. |
| Participants | 85 participants, from 16 countries |
| Secretariat facilities | None. |
| Financial | No financial implications. |
| Linkages to ACOM and group under ACOM | The EG is ready to support ACOM in addressing advisory requests from ICES clients if these are forthcoming |
| Linkages to other committees or groups | The subject area of this EG has close linkage with the following ICES groups: WGEAWESS, WGBESEO, WKCONSERVE, WGMARS, WGCOMEDA, WGIMM, WGBIE, WGIAB, WGSEDA, WGECON, WGIMM, WGRMES, WGNARS, WGHIST.<br>The HUDISG, of which WGSOCIAL is part, ensures the smooth and efficient introduction of further social and economic science into the ICES network. |
| Linkages to other organizations | Society of Applied Anthropologists (SfAA), NOAA Fisheries Human Dimensions and IEA Program, the Centre for Maritime Research (MARE), the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), Organistation for Economic Cooperation and Development (OECD), Scientific, Technical and Economic Committee for Fisheries (STECF), Coast Action, PICES, IMBER Human Dimension group, Future Coasts, Rethinkblue |

## Resolutions approved in 2022

### Working Group on Marine Planning and Coastal Zone Management (WGMPCZM)

**2022/FT/HAPISG05** The **Working Group on Marine Planning and Coastal Zone Management** (WGMPCZM) chaired by Caitriona Nic Aonghusa, Ireland; and Talya ten Brink, USA; will work on the following ToRs and generate deliverables as listed in the Table below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2023 | 27–31 March | Blanes, Spain | | |
| Year 2024 | 11-13 June | Galway, Ireland | | **Change in Chair:** Outgoing: Andrea Morf, Sweden |
| Year 2025 | | | Final report by September 2025 to SCICOM | |

**ToR descriptors**

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverables |
|---|---|---|---|---|---|
| a | Review and report on progress of marine spatial planning (MSP) and coastal zone management (CZM) in ICES member states. This ToR will inform activities in other ToRs and following relevant developments in other ICES expert groups with special attention to recognised key themes. | Marine and coastal plans are being implemented and revised in many countries. This presents opportunities to learn from planning processes, as well as new trends and policy objectives in coastal and marine use. This ToR facilitates systematic reflection to develop understanding and institutional learning. It explores how different nations have progressed and managed their marine planning. The WG will share challenges and best practices. This ToR provides basic information and overviews supporting in-depth analysis in other ToRs. Current key themes include: 1. Use trends and key spatial demands, conflicts, coexistence and synergies; 2. Process management, implementation, monitoring & evaluation; 3. Stake-/rightsholder involvement; 4. Use of various types of information, under-represented types of data (e.g. social), decision support | 2.7, 6.2, 6.3, 6.6, 7.3, 7.4, | 3 years | Y 1: Country update template for an annually updated baseline to inform other ToRs.<br>Y 2: Streamlined template to follow identified key developments.<br>Y 3: Policy brief describing key developments and trends in MSP. |

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| | | tools; 5. Transboundary issues including the application of the ecosystem approach. | | |
| b | **Incorporating marine conservation and restoration needs into MSP** by exploring if and how MSP can be used to deliver better protection and coexistence of protection and restoration areas with other activities. | On-going biodiversity loss and ecosystem degradation are key challenges, both globally and at regional/local levels. There are various approaches to develop marine conservation and restoring and enhancing ecosystem functions. Principal among these is the aspiration to increase MPA coverage to 30% by 2030. However, institutional and management gaps in many countries make it difficult to efficiently address this. Not least marine planning law is only loosely connected to conservation planning and management. There is a need to identify institutional and structural issues associated with conservation and planning nationally and internationally, including gaps and linkages to EU, regional and global policies. | 6.1, 6.2, 6.3, 6.4 3 years | Y1: Document analysis (and if necessary expert workshop) to review a) current conservation/ restoration planning requirements, b) the needs to scale up pilot efforts, and a stocktake of c) the current state of play and how MSP and conservation/ restoration are addressed.<br>Y2: Expert workshop to identify legislative and implementation barriers preventing the optimal use of MSP to support conservation and restoration goals.<br>Y3: Report or scientific discussion paper with recommendations as to how MSP can better support conservation and restoration goals. |
| c | **Supporting the development of climate-smart MSP** by: a) improving the understanding of the impacts of climate change on the development and implementation of MSP and of the alignment between climate- and MSP-policies. b) exploring how MSP can be used as a mechanism to implement climate action, supporting climate change adaptation and mitigation. | Climate Change (CC) pressures cause changes to the spatial distribution of marine biodiversity which, in turn, impacts on coastal and marine human activities. Marine spatial plans now generally acknowledge this though dedicated policies. There is a need to analyse how CC impacts MSP and how well relevant policies are aligned and to explore concretely how MSP can promote CC adaptation and mitigation. Some of the known issues relate to (i) the land-sea boundary; (ii) how to address differing time scales between policy and user needs; (iii) how to support truly adaptive, flexible MSP and management that can incorporate change; (iv) the need to provide solutions, from plan to implementation; and (v) coexistence and offshore wind as a mitigating solution. | 1.1, 1.3, 1.9 3 years | Y1: ICES/PICES Symposium session on MSP addressing CC (Bergen, April 2023); expert workshop (WKCCCMSP) to assess the current status and inform the next steps; scientific paper based on the results.<br>Y1/Y2: Improved understanding of how CC is addressed in the implementation of marine plans globally.<br>Y:3 Framework to inform the implementation of climate smart plans. |
| d | **Identifying spatial planning requirements for large scale scenarios of** | In light of energy security, offshore wind is causing major changes in how many ICES | 2.7, 6.2, 6.3, 7.3, 7.4, 7.6 3 years | Y1-2: Collect and analyse current status of offshore wind and offshore hydrogen in MSP plans in |

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| | **Offshore Wind and Hydrogen** by (1) analysing how existing plans balance energy requirements with other spatial interests, support co-existence and manage related conflicts, (2) analysing upcoming planning challenges arising from various available large scale (trans-)national scenarios for offshore wind and hydrogen, (3) identifying requirements for transboundary planning and cooperation and for sharing opportunities and burdens at sea basin scale in a context of ecosystem management, cumulative effects, energy security, and transnational infrastructure and policy development. | Member States are using their seas. Areas such as the North Sea are turning rapidly into energy powerhouses to meet renewable energy targets. Besides electricity, the production of hydrogen for industrial use is evolving as a complementary policy target. This puts marine planning under stress to deploy ever larger areas for renewables. However, these spatial needs and policy targets have to be balanced with other interests, such as fisheries and conservation. | | | selected ICES Member States, specifically how they cope with spatial requirements of renewables policies and trade-offs with other marine policies.<br>Y2: Analysing transboundary planning challenges for large scale offshore wind scenarios including issues of co-existence and co-use, specifically cross-boundary trade-offs and conflicts from cumulative impacts at a Regional Seas scale.<br>Y3: Synthesis report on institutional requirements, transboundary planning needs and potential transnational trade-offs for large scale offshore wind scenarios. |
| e | **Addressing education and training needs in marine spatial planning (MSP) and coastal zone management (CZM)** by following the development of practice and profession and by developing relevant educational and training materials in collaboration with the ICES secretariat and with other interested actors. | As marine and coastal planning are evolving rapidly, there is a need to promote the understanding of marine and coastal planning and management and help training relevant practical skills. This includes appropriate and up-to-date education and training materials – both for planning experts, decision makers and wider society. The group will:<br>1. Follow the education and training needs for marine and coastal planners and policy makers.<br>2. Work with the ICES secretariat to develop and deliver training materials / courses as required.<br>3. Act as scientific advisory board to the MSP Challenge serious game - sensitive to developments and capacity needs.<br>4. Advise on how MSP and CZM can make platforms to enhance Ocean Literacy within society. | 6.3, 6.4, 7.4 | 3 years | Y1-3: Follow the developments and report on education and training needs. Advice on request to the ICES Secretariat and other interested parts.<br>Y2: A workshop or a conference session on MSP/ICZM as platforms for OL to share experiences, in collaboration with other interested organisations (e.g. IOC UNESCO, VASAB).<br>Y3: Policy brief or training module (as appropriate) covering identified current needs. |

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| f | **Develop a better understanding of how social considerations are addressed in MSP** by mapping current planning practices and assessing which practices are suitable for various MSP purposes and situations. | Given the ongoing roll-out of MSP, the relationship between MSP/ CZM and the social dimensions of sustainable development is of high interest to planners and academics; this dimension remains an important gap in both planning evidence and practice. Over the past period the WG has collected data on how marine spatial plans are referring to social aspects and whether/ how the participation of vulnerable groups, e.g. small-scale fishers, is actively encouraged. The aim is to provide documentable and comparable knowledge on relevant MSP practices and on their suitability for different purposes and contexts, on the basis of systematic data collection and analyses. | 6.3, 7.1, 7.5, 7.6 | 3 years | Y1: Scientific paper on how current marine plans refer to social dimensions.<br>Y2: Synthesis workshop on how social considerations can be enhanced in MSP.<br>Y3: Scientific paper on enhancing social considerations in MSP. |

**Summary of the Work Plan**

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| Year 1 | ToR A: Country update form and presentation template for an annually updated baseline, also informing other ToRs.<br>ToR B: Document analysis and (as necessary) expert workshop to review current conservation and restoration practice and needs in relation to MSP.<br>ToR C: Workshop product from 2022 (Nov) to inform next steps and conference session on MSP addressing CC and a scientific paper based on the results of workshop.<br>ToR D: Current of status of offshore wind and hydrogen in marine plans.<br>ToR F: Scientific paper on how current marine plans refer to social dimensions. |
| Year 2 | ToR A: Streamlined template to follow identified key developments.<br>ToR B: Expert workshop to identify legislative and implementation barriers preventing the optimal use of MSP to support conservation and restoration goals.<br>ToR D: Analysing transboundary planning challenges for large scale offshore wind scenarios.<br>ToR E: Workshop or a conference session on MSP/ICZM as platforms for OL to share experiences, in collaboration with other interested organisations (e.g. IOC UNESCO, VASAB)<br>ToR F: Synthesis workshop on how social considerations can be enhanced in MSP. |
| Year 3 | ToR A: Policy brief on the main insights regarding the key themes.<br>ToR B: Report or scientific discussion paper with recommendations as to how MSP can better support conservation and restoration goals.<br>ToR C: Framework to inform the implementation of climate smart marine plans.<br>ToR D: Synthesis report.<br>ToR E: Policy brief or training module covering current training and education needs.<br>ToR F: Scientific paper on enhancing social considerations in MSP. |

**Supporting information**

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| Priority | WGMPCZM activities cover many priority areas across the ICES science plan and should therefore be of high to very high priority. The activities of WGMPCZM are urgent in terms of the current marine and coastal problems to address requiring an integrative perspective and a rapidly developing practice of MSP/ICZM in need of relevant knowledge and training: climate change and biodiversity and habitat loss and how to address these (restoration, carbon sequestration), pressure on deep sea areas, fast evolving blue economy activities, current rapid development of marine and coastal management institutions and related need for capacity development and institutional learning. Most ToR topics are somehow included in the ICES science plan, but often lack links to relevant R&D, training, education and capacity development in marine and coastal planning and management (both students, practitioners and decision makers). There are important links to other ICES initiatives and working groups working with CC, integrated ecosystem assessments, social dimensions, marine uses and pressures and would like to develop these. This group is still relatively unique within ICES as one with a highly interactive science policy interface – ascertained through the composition of the group, encompassing researchers, planners and policy experts from various disciplines and fields of practice. |
| Resource requirements | The research programmes which provide the main input to this group are already under way, and resources are committed. Group members will also continue to apply for resources as the issues develop. |
| Participants | The Group is normally attended by some 20–25 members and guests. |
| Secretariat facilities | Standard EG support. |
| Financial | No financial implications. |
| Linkages to ACOM and groups under ACOM | There are no obvious direct linkages. But the WG can support advice requested based on its ToRs and capacity. |
| Linkages to other committees or groups | There is a working relationship amongst all the groups within HAPISG (in particular, WGOWDF, WGORE) and contacts to expert groups under other steering groups (e.g. Integrated Ecosystem Assessments, WGIPEM and other WGs addressing offshore wind farm issues). ToR A expressly wants to follow relevant developments and invite sharing across EGs. |
| Linkages to other organisations | National organisations responsible for the implementation of marine and coastal planning and related knowledge, EU DGMARE, EU MSP Expert Group, the HELCOM-VASAB MSP working group, the OSPAR MSP initiative, the IOC UNESCO MSP Global initiative, the United Nations (e.g. treaty negotiations for BBNJ, Ocean Literacy, Ocean Sciences Decade). |

## Working Group on Maritime Systems (WGMARS)

**2022/FT/IEASG02** A **Working Group on Maritime Systems** (WGMARS), chaired by Jessica Fuller, Norway, Patricia Clay, USA, Leyre Goti, Germany, and Jennifer Bailey, Norway, will work on ToRs and generate deliverables as listed in the Table below.

| | Meeting dates | Venue | Reporting details | Comments (change in Chair, etc.) |
|---|---|---|---|---|
| Year 2023 | 30 May–2 June<br>30–31 October | Online<br>Online | Interim E-eval by 14 November 2023 | Jessica Fuller, Norway, as incoming chair |
| Year 2024 | 21 – 22 May | Online | Interim e-eval by TBD | Patricia Clay, USA, outgoing chair (date TBD) |
| Year 2025 | Europe/Hybrid | | Final ICES Scientific report by 31 August 2025 | |

### ToR descriptors

| ToR | Description | Background | Science Plan Codes | Duration | Expected Deliverable |
|---|---|---|---|---|---|
| **a** | Analyse how the use of behavioural economics can support EBFM implementation | Fisheries management requires insight into human behaviour to understand how users respond to policy interventions. WGMARS will use behaviour economics as a tool to provide insight in behavioural mechanisms and responses. | 6.3, 7.4, 7.5 | Years 1 and 2 | Paper submited to peer-reviewed journal |
| **b** | Apply Social Network Analysis as a tool to assess ICES network connectivity and preparedness to address IEAs and the ICES Science Plan | Finalize analyses for ICES IEA Expert Groups and complete and submit the current SNA draft that was initiated with support from the ICES Science Fund | 6.3, 7.4, 7.5 | Year 1 | Paper submited to peer-reviewed journal |
| **c** | Investigate how/to what extent sex and gender (of Expert Group (EG) participants and of human research | The terms “sex” and “gender” are often conflated or overlooked, in science generally and within ICES. This work will | 6.4, 6.6, 7.1, 7.2 | 1-3 | Creation of an initial dataset;<br>A news article featured in the ICES Newsletter |

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| | populations) are considered in the science of ICES EGs, through review of their Terms of Reference and interaction with the chairs. | provide an important baseline and contribution to the ICES Gender Equality Plan and the qualitative target "Awareness of sex/gender issues in research and projects". | | | |
| **d** | Analyse and compare the implementation and linkages of IEA/EBM/MSP and fisheries in the EU, and a selection of individual European and non-Euopean member states. | EBM is a core ICES goal, and it may be implemented via the MSP or IEA tools. ICES has supported the use of both. This work will provide more detailed informaion on current uses of and connections between IEA and MSP at multiple and cross-jurisdicional levels. | 7.4, 6.2, 6.1 | 1 , 2 | ICES Cooperative Research Report |
| **e** | WGMARS' IEA paper uncovered some facilitating factors and barriers to the uptake of IEAs in ICES. Organisational theory, based in sociology and including new-institutionalism and meta-organizational theory, offer avenues to improving understanding these and other barriers and facilitating factors to fulfilling ICES' goals. Outputs will be used to inform ACOM, SCICOM and IEASG Chair on possible tools to overcome identified barriers. Possibilities to connect with ICES's IEA work will be further explored. | Use organizational theory to understand mechanisms and barriers to implementation of IEAs in ICES. | 6.2, 6.3, 6.4 | 1-3 | Paper submitted to peer-reviewed journal<br>Identified barriers detailed in end of year/term WG report/s |

**Summary of the Work Plan**

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| **YEAR 1** | • MAP THE USE OF ECOSYSTEM-BASED MANAGEMENT (EBM VIA INTEGRAED ECOSYSTEM ASSESSMENT (IEA), AND MARINE SPATIAL PLANNING (MSP) IN A VARIETY OF CONTEXTS.<br>• SUBMIT PAPER REPORTING ON SOCIAL NETWORK ANALYSIS (SNA) OF ICES.<br>• CONTINUE AND CONSOLIDATE WORK IN BEHAVIOURAL ECONOMICS<br>• BEGIN EXPLORATION OF ORGANIZATIONAL THEORY AND GENDER ISSUES IN CONNECTION WITH ALREADY COMPLETED SNA WORK. |
| Year 2 | Continue development of organizational theory and gender themes with respect to the operation of ICES and its work. |
| Year 3 | • Submit papers to journals on the applicablity of organizational theory and gender analysis<br>• Explore feasibility of future work. |

**Supporting information**

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| **Priority** | ICES continues to use and promote interdisciplinary approaches to explore how to improve ICESs' management and advice. WGMARS will be building on its own work in this area, in particular work designed to enhance ICES' ability to support IEAs and other fisheries management tools. Consequently these activites are considered to have a very high priority. |
| **Resource requirements** | Resource requirements are covered by WGMARS members, including through already funded projects and in some cases with institutional support. |
| **Participants** | The Annual Meeting is normally attended by some 10-15 members and guests. |
| **Secretariat facilities** | None. |
| **Financial** | No financial implications. |
| **Linkages to ACOM and groups under ACOM** | There are no obvious direct linkages. |
| **Linkages to other committees or groups** | There is a very close working relationship with the IEASG. WGMARS is also very closely connected to the Strategic Initiative on Human Dimensions and involved in its activities. WGMARS will seek to enhance linkages with other WGs, especially those dedicated to the integration of social and economic approaches and data, in the coming ToR period. WGMARS is very relevant to the Integrated Ecosystem Assessment Working Groups, and involved in Workshops such as the recent WKCCMM. |
| **Linkages to other organizations** | WGMARS reaches out to various stakeholders and EBM professionals outside of ICES. |